EMBEDDEDNESS AND WORKPLACE RELATIONS: A CASE STUDY OF A BRITISH-BASED JAPANESE MANUFACTURING COMPANY

by

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Declaration and Inclusion of Material from a Prior Theses and Inclusion of Published Work

The quotations on pages 143 and 154 were obtained during research for my M.A. Thesis (University of Warwick 1992). These quotations were published in Palmer (1996).

The research for the PhD thesis has formed the basis of one journal article published prior to the submission of this thesis, Webb and Palmer (1998). My contribution to this was as co-author and provider of all empirical material.

This thesis has not been for a degree at another university.

Abstract

This thesis presents an analysis of workplace relations in a British-based, Japanese manufacturing company. The extent and nature of managerial hegemony within Japanese transplants, and the ability of workers to pursue informal means of 'counter-control', are both highly contested issues within the 'Japanisation' debate. It is these two related issues that are addressed here. The research is based primarily on a nine-week period of participant observation as a shopfloor worker. This was supplemented by interviews and 'shadowing' of key personnel in the case study company. In addition, interviews were held with staff in buyer and supplier firms trading with the case company.

This thesis devises a framework based on embeddedness (Granovetter, 1985) to analyse the research data. Using the constructs of networks and social relations which constitute embeddedness, four network structures and three categories of social relations are applied to workplace relations in the case study company. It is argued that the embeddedness framework provides a way of resolving concerns not addressed satisfactorily by other academic studies of the labour process in Japanese transplants. As this framework has not previously been applied to the labour process debate it represents a novel contribution to academic debate.

A number of key conclusions emerge. First, workers have retained the capacity to engage in resistance in at least some high-surveillance organisations. This illustrates the significance of setting control and surveillance systems in the organisation's social and economic context. Second, a 'holistic' approach is required in order to understand the complexity of the labour process and to establish why workplace relations take their specific form in particular contexts. Third, in analysing Japanese transplants, the policies of the companies and actions of management need to be explored with awareness of their potential shortcomings and tensions, rather than solely from a perspective of coherence and effectiveness.

Introduction

The post-war revival and expansion of Japanese manufacturing industries led White and Trevor to accord them the accolade of 'economic miracle-workers of our era' (White and Trevor 1983:1). While this may seem somewhat sanguine given the current problems facing the Japanese economy, the Japanese achievements have been considerable. Gross national product in Japan showed an annual average per capita growth rate of 3.6% between 1963 and 1996, compared with 1.9% for the United Kingdom and 1.4% for the United States of America (World Bank 1998). What has been particularly noteworthy is the ability of Japanese manufacturing industries to penetrate successfully the former bastions of Western industrial strength, such as the motor vehicle industry, and also to secure a large share of emerging customer markets in industries such as electronics. Moreover, this has been achieved without the advantage of any significant indigenous raw material resources.

A variety of explanations have been advanced to explain the success of Japanese companies. These have included the role of the Japanese Ministry of International Trade and Industry in both protecting the domestic economy and selecting 'winning' companies (Dicken 1998), the development of strong interfirm links within oligopolistic structures which allowed Japanese companies to compete effectively in wider world markets (Sako 1992) and the superiority of Japanese management (Pascale and Athos 1982). One consistent feature in many explanations of the 'Japanese miracle' is the

apparent commonality of interest between the organisation and its workforce. Japanese workers are viewed as more committed than their Western counterparts; they strike less, take fewer holidays, work longer hours and contribute more to suggestion schemes (Koike 1988; Lincoln and Kalleberg 1990; Lorriman and Kenjo 1996) As Lincoln and Kalleberg observe 'a pervasive theme in studies of Japanese industry has been the extraordinary commitment, identification and loyalty exhibited by employees towards their firms' (1990:3). The basis of this alleged enterprise loyalty is however a matter of academic dispute. On the one hand is a perspective that interprets this commitment as willingly given and the product of the country's unique culture (Abegglen and Stalk 1985; Morishima 1982). Set against this is a 'darker' view of the labour process in Japanese companies which argues that the high levels of worker effort are not willingly volunteered but are extracted from the labour force as a consequence of both incorporated trade unions and employment practices that involve intensive managerial control and surveillance at the point of production (Dohse et al.1985; Kamata 1983). Dohse et al. argue that the Japanese employee relations model 'is only possible in an industrial relations environment in which there are hardly any limits to management prerogatives' (1985:140).

Notwithstanding the controversies surrounding the basis of Japanese industrial achievement, this success has led to a burgeoning academic interest in Japanese companies (Dore 1989). This interest has been sustained by the establishment of Japanese transplants in the West and also by attempts of Western companies to emulate Japanese practice. These

parallel developments of transplant and emulation have generated a significant body of academic literature relating to 'Japanisation'[1]. From the point of scholarly activity in Britain and America, this academic literature can be divided broadly into two phases. The initial phase, located mainly in the 1980s and early 1990s, focused on issues relating to the potential transferability of Japanese ideas and policies (Abo 1994; Bratton 1992; Dunning 1986; Milkman 1991; White and Trevor 1983; Reitsperger 1986)[2]. The second phase debate moved away from discussions surrounding the issues of transfer per se, to an analysis of the impact of Japanisation on the labour process, both in terms of managerial motives and employee outcomes.

It is this second phase of the Japanisation debate which concerns this study most directly. Initially, this debate mirrored the discussion surrounding the nature of the labour process in Japan, in that it polarised into two opposing stances. On the one hand is a 'high-commitment' perspective that emphasises the generation of commitment stemming from an egalitarian regime and employee involvement (Adler 1993; Adler 1994; Wickens 1993). Set against this is a 'heightened-control' perspective which views the personnel and production policies of Japanese transplants as representing a regime of increased subordination for the workforce (Delbridge and Turnbull 1992; Morris et al.1993; Sewell and Wilkinson 1992a, 1992b; Sewell and

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[1] It is recognised that the term Japanisation is a contested one. For the purposes of this study the term will be used to denote the debates that surround the transfer and transplant of methods associated with Japanese manufacturing.

[2] These two phases are broad working categories which reflect the overall balance of published material; it is acknowledged that academic interest in issues rarely has fixed 'cut off' points. For example there has been a recent revival of academic interest in the (non) use of Japanese methods by British manufacturing companies (Proctor and Ackroyd 1998; Scarborough and Terry 1997, 1998).

Wilkinson 1993). This polarisation of opinions is exemplified by observations on Nissan's Sunderland factory whose guiding principles have been described by Wickens (1987) as 'quality, flexibility and teamwork' and reinterpreted by Garrahan and Stewart as 'control, exploitation and surveillance' (1992:111).

While the heightened-control perspective provided a valuable 'corrective' to the view that management is able to engineer a convergence of interests and hence worker consent to new work practices, in stressing the efficacy of managerial control systems it can be viewed as overstating the degree of employee subordination. Thus, although the high-commitment and heightened-control perspectives are diametrically opposed in their diagnosis of consent/coercion, it has been argued that they generated a teleological analysis based on shared assumptions that managerial strategies work and that management appeared to have resolved the age-old 'problem' of worker resistance (Stewart 1996; Stewart 1998).

Recent studies have presented a more nuanced account of workplace relations in Japanese transplants, either accounting for management control by locating control systems within their overall firm-specific context or recognising the limits to management hegemony and illustrating that worker resistance continues to present a challenge to management (Babson 1993; Babson 1996; Delbridge 1998; Graham 1995; Grant 1996; Stephenson 1996). There has been an increasing recognition that, despite two decades of a political and economic climate that has been generally unfavourable to labour, management have not simply had things all their own way.

However, notwithstanding these valuable re-appraisals of the labour process in Japanese transplants, there are important issues that remain under-researched and unresolved. The vast majority of in-depth case studies of transplants have been set in final manufacturing companies; there has been little exploration of workplace relations in Western-based, Japanese-owned first tier suppliers. This is a lacuna as recent developments in buyer-supplier relations have posed considerable challenges for first-tier suppliers and have had an influence upon the labour process in these companies (Danford 1998a). A further issue concerns explanations of compliance and resistance. While worker resistance has been linked to specific factors such as local labour market conditions, strong trade unionism and a mistrust of management, there has been little by way of a holistic analysis of workplace relations. By 'holistic' is meant an analysis that includes the motives and behaviours of all groups of actors (workers, supervisors, support staff and managers) and which explores influences upon the labour process both in terms of factors at the point of production and also the company's wider commercial environment. Relatedly and finally, there is a need to develop an adequate framework in which to discuss and analyse the labour process. Early accounts of Japanese transplants stressed the synergy between manufacturing and personnel policies (Oliver and Wilkinson 1992; Reitsperger 1986; Trevor 1988). However, these have proved inadequate as the academic literature has begun to illustrate the conflicts between policies in Japanese transplants and, in particular, the way in which worker actions have exposed these tensions (Elger and Smith 1998; Grant 1996; Smith and Elger

1998). More recent analytical perspectives have provided useful accounts which have recognised some of the key factors in resistance-compliance but have not produced a satisfactory holistic analysis of workplace relations in Japanese manufacturing transplants. For example, Graham's (1995) study of Subaru paints a valuable and graphic picture of life on the line but focuses its analysis solely on factors at the point of production, ignoring potentially significant issues such as product markets.

It is these issues that inform the three aims of this ethnographic study of workplace relations at 'Telco', a British-based Japanese manufacturing company. First, to deepen academic knowledge and understanding of workplace relations in Japanese transplants by presenting data from a Japanese-owned, British-based first-tier supplier. Second, to develop a holistic analysis of workplace relations. Third, to devise and apply a analytical framework for understanding the labour process in Japanese transplants.

As well as outlining the aims of the study it is important to delineate its boundaries. There are a number of issues that are not pursued in this study. One of these is the significance of trade unions in Japanese transplants. This is not addressed here because the case study that forms the basis of this thesis is non-unionised, as are a number of Japanese transplants in both Britain (Smith and Elger 1998) and America (Milkman 1991).

Second, an analysis based on gender relations in the workplace has not been incorporated into this study. Some explanation for this decision is required. The underlying approach taken here is not a 'unisex' one which denies any gender-specific influences. In chapter two of this thesis, the role of

gender is recognised and discussed in relation to the construction of identity for both males and females within the analytical framework of embeddedness. What is 'absent' from this thesis is a theorisation of gender relations within the specific context of Telco. Whilst recognising that gender relations can have an implicit effect on workplace relations, the approach taken in this thesis is to focus the analysis around the central concerns raised by the actors in the case study company. This approach is consistent with other recent studies of workplace relations which have not included a gender-based analysis (Scott 1994). At Telco gender relations issues were seldom raised by the workers themselves; when they were, these instances have been recorded. Gender-specific actions, such as the form of escapist 'marriage rituals' noted by Westwood (1983) were absent from the shopfloor at Telco. So, the embeddedness framework does not deny the existence of gender on workplace relations, indeed it provides an opportunity for such an analysis, if the empirical data suggests this is a key issue. In the specific context of Telco, as a matter of empirical observation, gender issues were an occasional rather central feature of the patterns of control and compliance, therefore gender is not addressed as a theoretical concern.

This study is presented as follows. Chapter one discusses and analyses the major research contributions concerning the labour process in Japanese manufacturing transplants in Britain and America. It identifies the strengths and shortcomings in this literature and uses these to construct the key empirical and theoretical issues to be developed by this study. Chapter two develops the analytical framework of embeddedness which forms the

basis of this study. This framework is derived from the work of Granovetter (1985) and uses his concepts of 'networks' and 'social relations' to construct a series of categories through which the labour process can be analysed. This approach is novel in two ways: it devises specific categories relating to networks and social relations and it also applies these to the labour process debate. The third chapter provides a critique of the methodologies employed in some accounts of Japanese transplants and considers the appropriateness of single-case ethnographic research to achieve the aims of this study.

Chapters four to eight present the empirical data. The focus of chapter four is on workers' experience of personnel policies. In the main, the workers see these policies as being neither fair nor consistently applied, generating a distrust of management. A further feature of the personnel policies is that they are characterised by a lack of coherence and, consequently, they undergo continuous adjustment as the company seeks to rectify the tensions and conflicts which arise. Chapters five and six present a linked account of managerial control systems at the point of production. These control systems provide an extensive array of surveillance mechanisms which include 'traditional' methods such as personal control as well as those based on the electronic monitoring systems. The findings illustrate that despite the intensive nature of control, workers still find ways of resisting through 'fiddles'. The debate then moves on in chapter seven to consider the role of the supervisors. Supervisors were under significant pressure to attain output targets but were simultaneously faced with major logistical problems on the shopfloor. To help resolve these production dilemmas they would often

engage in reciprocal alliances with workers which involved the circumvention of formal operating procedures. Thus supervisors were a key factor in facilitating resistance. A further key influence on the labour process was the company's relationship with its buyers and suppliers, and it is this which is discussed in chapter eight. The company was subject to a high degree of market pressure exerted by a small number of powerful customers, but it was unable to replicate this pressure with its own key customers. In addition, management failures to resource and to monitor company operating procedures exacerbated supply problems. As a consequence of these factors, there was a climate of uncertainty on the factory floor which allowed workers the opportunity to engage in 'fiddles'.

The final chapter forms the conclusion. In the conclusion the embeddedness framework is discussed in relation to the case study presented here. It is argued that the framework has provided an effective analytical base through which to explore the complexities of workplace relations. More broadly, the framework is used to consider current issues within the wider labour process debate by addressing concerns over the disappearance of collective labour from recent studies (Martinez-Lucio and Stewart 1997). The conclusion also summarises the key findings in relation to resistance, management and Japanisation. It is not proposed to replicate this discussion here but it can be broadly synthesised into three points. First, workers have retained the capacity to engage in resistance in at least some high-surveillance organisations. Studies of resistance/compliance need to set control and surveillance systems in the organisation's social and economic

context. Second, in analysing Japanese transplants, the policies of the companies and actions of management need to be explored with awareness of their potential shortcomings and tensions, rather than solely from a perspective of coherence and effectiveness. Third, a holistic approach is required in order to understand the complexity of the labour process and to establish why workplace relations take their specific form in particular contexts

Chapter One

The Japanese Factory Floor in Britain and America: Evidence, Controversies and Shortcomings in the Debate.

This chapter presents and analyses research concerning workplace relations in Japanese transplants in Britain and America. The chapter has two inter-related aims. First, given the extensive nature of the research material and its conflicting and contested nature, the chapter organises, outlines and evaluates the main issues and debates. Second, the chapter provides an assessment of some of the shortcomings in the Japanisation literature in order to generate the research issues to frame the study. The evaluation of both case study material and theoretical perspectives generates a series of key questions that inform the analytical basis of this study.

Research focussing on Britain and the United States of America has been selected as this reflects the significant position of these two countries as the 'home' to more Japanese foreign direct investment than any other nations. In addition, while this choice allows the material to be kept within manageable bounds, much of the literature on Japanese transplants concerns these two countries, thus providing a rich resource base.

The chapter is organised in the following manner. It begins with a brief analysis of the significance of the labour process under Japanisation and the implications for managerial control within what has been characterised as a 'high dependency' production system (Oliver and Wilkinson 1992;

Schonberger 1982). It then moves on to evaluate two contrasting perspectives which emerge from academic studies of managerial control systems within Japanese transplants. One view emphasises worker commitment and empowerment, while the opposing perspective stresses heightened control and surveillance. A critique of these studies leads to the next section which discusses evidence suggesting that the shopfloor of transplant companies continues to represent a frontier of control. Finally, there is a concluding section which presents a summary of the chapter's findings and outlines criteria that an analytical framework needs to meet in order to explain the labour process in Japanese transplants.

Japanisation and the labour process

Before entering into the debates concerning workplace relations, it is important to establish why the labour process in Japanese manufacturing transplants has become an issue of contention. The starting point here is the nature of the manufacturing system associated with Japanese companies. It is argued that this system has a particular significance for the labour process by making the firm more dependent upon their workforce than in previous production regimes (Oliver and Wilkinson 1992). It is a system which, despite different practice at the level of the firm (Cusumano 1986), is organised around three basic principles: muri (the avoidance of excess), muda (the elimination of waste) and mura (the removal of unevenness) (Schonberger 1982). The implementation of these principles, whilst offering advantages over traditional Western manufacturing systems, produces a more fragile

production process. For example, the avoidance of excess can be pursued through just-in-time (JIT) supply and production systems which reduce or eliminate buffer-stocks between workstations. This demands that operators perform their tasks consistently and efficiently, as the effects of any deviations from the norm quickly ripple along a production system shorn of any excess work in progress. Similarly, the use of quality circles and kaizen programmes, which can yield less material waste and higher product quality, relies on the operators contributing their own knowledge and ideas to the improvement of the production process (Wood 1989). This increased dependency on the workforce gives it 'extra scope to cause disruption whether by accident or by design' (Oliver and Wilkinson 1992:83).

For the firm to neutralise this dependency, it becomes imperative to develop systems for the management of labour which render workers either unable or unwilling to act against the company's interest. In the case of Japanese manufacturing transplants there are two differing accounts of how this dependency relationship is managed. On the one hand, there is a view which emphasises the generation of worker commitment stemming from an egalitarian regime and employee involvement and empowerment (Wickens 1987; Womack et al.1990). Set against this is a critical perspective which sees the personnel and production policies of Japanese transplants as representing a new regime of subordination (Delbridge and Turnbull 1992; Sewell and Wilkinson 1992a, 1992b; Sewell and Wilkinson 1993). These two competing perspectives can be named the 'high-commitment workforce' and

the 'tightly-controlled workforce' (Palmer 1996). This chapter now moves on to explore and evaluate these two viewpoints.

The high-commitment workforce.

This perspective contends that Japanese transplants have successfully changed workplace relations from an adversarial climate based on a conflict of interests between managers and workers, to a unitarist culture based on mutual respect and joint benefit. This is summarised by Wickens' maxim that managers can change corporate culture from 'them and us to simply us' (Wickens 1987:7).This realignment of sectional interests is achieved, it is argued, through two broad sets of policies, HRM practices and work organisation. Table one lists HRM and work organisation practices associated with Japanese companies, which are consistent with the high commitment model (Walton 1985)

Table 1

Japanese practices and the high-commitment model.

Workforce strategies	**Commitment Model**	**Aspects of Japanese Practice**
Job design principles:	Individual responsibility extended to upgrading system performance	Kaizen Quality circles TQM
	Frequent use of teams as a basic accounting unit	Team structures Cellular production
	Flexible definition of duties contingent on changing conditions.	Functional flexibility.

Management organisation; structure, systems and style:	Flat organisational structure with mutual influence systems.	Flat management hierarchies. Two-way communication systems.
	Minimum status differentials to de-emphasise inherent hierarchy.	Single-status. Shop floor 'offices'.
Compensation policies:	Individual pay linked to skills and mastery.	Pay partially based on appraisal of skills and performance.
Employment assurances:	Assurances that participation will not result in loss of job.	No redundancy policy.
	Priority for training and re-training existing workforce.	Functional flexibility. On the job training. Promotion through internal labour market.
Employee voice policies:	Employee participation encouraged on a wide range of issues. Attendant benefits emphasised. New concepts of corporate governance.	Team briefings. Kaizen. Quality circles. Company councils.
	Business data shared widely.	Written and verbal reports to employees on regular basis.
Labour - management relations:	Mutuality in labour relations, joint planning and problem -solving on expanded agenda.	Company councils. Single unions.
	Unions, management and workers redefine their respective roles.	No-strike arrangements. Union membership recommended by management.

Source: Palmer 1996.

Advocates of Japanisation assert that the human resource management policies of the transplant companies are a key factor in generating worker loyalty, transforming the principles underlying the management of labour from the imposition of direct control to the pursuit of commitment. This HRM approach emphasises, amongst others things, careful and extensive selection procedures to recruit employees not merely with the required skills but also with the appropriate mix of attitudinal and personality characteristics (Perruci 1994), harmonisation of terms and conditions of service, abolition of overt status barriers and the development of effective two-way communication channels, emphasising that workers at all levels have a 'voice' in the organisation (Trevor 1988).

The work organisation standpoint emphasises the (at least partial) departure of Japanese production methods from the predominantly Fordist/Taylorist systems, with the subsequent 'empowerment' of workers. In essence, it contends that employee commitment is achieved through the contribution that workers are able to generate within the production process, either through enlarged and more challenging task content or through kaizen programmes and quality circles which encourage ideas and innovation from the factory floor. A number of commentators have emphasised the enhanced role for operators of Japanese-style work organisation. For Womack et al. (1990), 'lean' production (essentially the Toyota production system) has replaced the routine drudgery of the Fordist production line with a factory floor staffed by 'highly skilled problem solvers whose task will be to think

continually of ways to make the system run more smoothly and productively' (Womack et al.1990:102). Likewise, Wood (1989) has emphasised the problem-solving potential of employees under the Japanese production system, arguing that their role becomes transformed into one of 'industrial engineers'.

Other commentators have been similarly positive if somewhat more circumspect. Kenney and Florida (1993) argue that the Japanese production system can be characterised as an innovative-mediated model of production, which is differentiated from Fordism by an emphasis on mental rather than manual labour. They accept that innovative-mediated production can function to 'pump more work from employees' (1993:275), but argue that the authority and responsibility delegated to the team unleashes new forms of worker initiative and creativity. Their view is that this 'trade off' of greater effort for intellectually stimulating employment can be of benefit to the worker. However, they recognise that the transfer of this model, whilst, in their view, offering advantages to employees, is not unproblematic but can rest on management's ability to persuade workers to hand over their creative potential and also on the actual extent of transfer of Japanese practices.

A variation on the Fordist versus Japanisation debate has been promoted by Wickens (1993). He argues that for many companies such as Nissan, most production processes remain necessarily rooted in Taylorist methods in order to retain control over the production system. However, he contends that commitment is generated by the involvement of operators in the design and continual improvement of standard operating procedures:

> Job satisfaction arises from performing the prescribed task well, achieving high levels of productivity and quality, and, at the same time being involved with changes in the process and the range of discretionary tasks. This results in a much higher degree of integration between the worker and the process, with workers being involved in decisions which affect the company. The distinction between white-collar and blue-collar workers becomes blurred, and the relationship between workers and managers changes. ...a controlled Taylorist system need not alienate if workers are able to contribute (1993:38).

Support for Wickens' view that the technical and social organisation of production associated with Japanisation represents a more worker-empowered version of Taylorism, comes from Adler's study of the NUMMI plant in America. Under its previous owners, General Motors, the factory was described as 'the worst plant in the world', with 'low productivity, abysmal quality, drugs and alcohol abuse and absenteeism of over 20%' (Adler 1993: 98). The plant was relaunched as a joint GM /Toyota venture and underwent a transformation in industrial relations; productivity doubled and absenteeism and measured grievances fell dramatically. Adler comments that:

> the overall proportion of employees describing themselves as 'satisfied' or very satisfied has risen progressively to more than 90% (1993:99).

Adler argues that this significant improvement in industrial relations was achieved against a background of tighter work discipline and increased standardisation of tasks. However, what also occurred was that workers were

allocated responsibility for the process of task standardisation. It was the line operators who timed jobs, decided on the best way to perform individual tasks and consequently wrote the detailed work specifications. In addition, the work teams embraced the principle of continuous improvement and problem-solving through the kaizen process. Thus, for Adler, the critical explanation for the increase in worker morale and the transformation of industrial relations at NUMMI 'lies in the production system itself and in the policies and practices which buttress it' (1993:102).

While it is apparent therefore, that there is no clear view amongst advocates of Japanisation on the extent of the break from Fordism, there is general agreement on the superiority of Japanese-style work organisation for workers and that high levels of employee commitment can be an outcome of these policies.

The goal of these high-commitment strategies is a reconfiguration of worker-management relations into a high trust, positive-sum game where conflict is replaced by mutual interest and co-operation. Control is not absent, but for individual workers it is self-generated rather than imposed through direct supervision. The pivotal element in generating and managing a high commitment workforce is a synergy between HRM and manufacturing strategies. Policies relating to the management of people are viewed as an essential element of business strategy and seen as operating in support of and in cohesion with production policies. Thus Oliver and Wilkinson (1982) have argued that Japanese manufacturing transplants in Britain are characterised by a 'goodness of fit' between their personnel and

manufacturing strategies, while Reitsperger (1986), in a study of Japanese, British and American companies in Britain, concludes that the Japanese transplants are distinguished by a 'careful fit' between manufacturing and personnel policies. Similarly, research from America suggests that there is a better 'fit' between the personnel and production policies of Japanese transplants than of American emulators (Doeringer et al. 1998). This coherence is echoed by Trevor in his study of Toshiba, who views personnel and manufacturing policies as forming an 'interlocking system'. He comments that:

> it cannot be too strongly emphasised that a major aim of Japanese management is to get the two systems in balance: what they would call the 'hard' systems of quality control and production management and the 'soft 'systems of employee motivation and personnel administration. Those who look at only the 'hard ' or the 'soft' are missing the point. Hard and soft are not opposites but are two sides of the same picture (1988:18).

In summary, the high-commitment perspective expounds significant claims concerning the joint benefits of Japanisation to both workers and management which emanate from an interlocking set of policies. Implicit in this analysis is the assumption that these policies can transform employee relations around an inclusive consensus culture where workers embrace the organisation's objectives and resistance is absent. This raises the question of whether these high-commitment strategies achieved their objectives. There is

a considerable amount of material to suggest that they have not always achieved the impact claimed by their advocates. It is this material which is presented next.

The ability of management to change unilaterally an employee relations culture from one of suspicion and adversarialism to that of commitment and inclusion should not be overestimated. In a critique of culture management models, Collins (1998) argues that culture-change perspectives present an over-socialised model of change. By over-socialised, Collins means that it overstates the ability of management to change attitudes which are historically and socially embedded. He comments that:

> Any model which claims that managers can effectively manage culture, can change how people think and act must therefore, be viewed academically, as over-socialised...each person or group will tend to adhere to the reality of organisational life as they perceive and experience it. We must therefore be realistic about the extent to which managers could effectively erase such a complex deep-rooted and plural and socially maintained set of values. Similarly, we must be realistic about the extent to which management could then impose a new and monolithic set of values, attitudes and beliefs on any population (1998:127)

Collins' argument provides a valuable counter-weight to accounts which do not recognise the socially embedded nature of employment relationships. This is not to argue that employees are not supportive of individual elements of the 'Japanisation package'. Evidence suggests that some workers have

responded positively to single status (White and Trevor 1983), employment security (Palmer 1996) and job rotation (Saso 1990). However, it is important to differentiate between employee approval for specific measures and a more comprehensive attitudinal change. As Kelly and Kelly (1992) found, workers can approve of particular high-commitment strategies without changing their underlying view that the employment continues to be characterised as 'them and us'

In addition to social values presenting difficulties for culture-management initiatives, the instrumental way that both workers and managers in Japanese transplants have manipulated specific high-commitment strategies has also militated against culture change in the workplace. In the case of management, Broad's (1994a) five-year study of the operation of a company council at a Japanese electronics transplant concludes that it was unsuccessful in achieving management's objective of a 'consensus culture'. Management's use of the council as a mechanism for passing information down to the shop floor, rather than as a forum for joint negotiation of any contentious issues, led to employee demands for the recognition of a union to represent their interests. Similarly, research by Grant (1994) at two electronics transplants operating 'new-style agreements (single-union recognition, no strike agreements, company advisory body, single-status and labour flexibility), suggests that they did not achieve their aim of creating a high-trust environment. The pattern of workplace relations in both companies was adversarial, as management failed or refused to grasp the 'spirit and intention' of co-operation underpinning these agreements.

Workers have also exploited strategies aimed at generating high commitment. For example, the sophisticated selection process at Subaru, which was aimed at producing employees with the 'correct' attitudes, was manipulated by applicants who 'cheated' during the selection process by supplying the answers they felt the company wanted to hear, rather than ones that were necessarily true. Graham describes her own actions in so manipulating the responses to a selection questionnaire:

> In most instances the answers that matched the qualities the company was seeking in employees seemed fairly obvious (and this was later confirmed by other applicants). For example, when responding to the statement: 'problems can be solved between employees and management through talking', I felt that the 'correct' answer was pretty straightforward. My only dilemma was how strongly should I agree (Graham 1995:23).

(Potential) workers cannot therefore be seen simply as 'cultural dopes', unaware of the broader political context of recruitment procedures; rather they can demonstrate a strong instrumental manipulation of the system.

The degree of success or failure of high-commitment strategies is also related to other factors. There is extensive case study evidence from Japanese transplants to illustrate that young workers have not 'bought-into' a unitarist corporate culture, rebelling against the high levels of discipline existing in most transplants and exhibiting high levels of labour turnover and absenteeism (Morris et al.1993; Palmer 1996; Smith and Elger 1998). Some transplants have sought to resolve this problem by changing policies away

from the recruitment of young workers towards hiring older, mature staff, who, it is argued, are more likely to appreciate the carrot of employment security and consequently demonstrate their commitment through regular attendance and 'appropriate' behaviour on the shop floor (Palmer 1996).

The literature has also identified a further barrier to the development of high commitment, namely, lack of managerial competence. Management's inability to ensure the smooth organisation of production can engender a lack of trust and commitment from the workforce (Batstone 1986). One such example emerges in Grant's (1996) study of Renko, where the factory floor was bedevilled by breakdowns in technology and poor quality supplies, and consequently workers became disillusioned and demotivated. Grant comments:

> Workers believed them (production methods) to be poorly organised and managed. Their willing participation in production methods designed to ensure high standards of production had given way to resentment, cynicism and a lack of commitment (1996:227).

That is not to argue that all Japanese transplants are characterised by poor management. Indeed, there is evidence that in some companies management has achieved an effective and efficient production organisation and that this is viewed positively by shop floor workers (Trevor 1988). The point at issue is that, despite the plethora of management literature proclaiming the superiority of Japanese management, it is unacceptable merely to assume that management in Japanese transplants are highly competent.

Finally, it needs to be recognised that not all Japanese transplants practice high-commitment strategies. Milkman's (1991) study of small Japanese companies located in California found that these factories were characterised by a simple production processes, staffed by low paid, mainly immigrant workers with few of the HRM or work enrichment policies discussed above. The only 'high-commitment' policy that was a consistent feature of the sample was the non-contractual 'no-layoffs ' policy which, Milkman argues, was fairly meaningless given the regular turnover of labour in many companies. Moreover, not only was high-commitment not practised, in some cases it seemed to be positively discouraged. Managers in several plants complained that labour turnover was too low which caused problems with staff motivation and the inability of older workers to sustain the required pace of work. Nor is it the case that the lack of high commitment strategies is limited merely to a tranche of geographically specific small companies. Mair's study of Honda U.K. found little evidence of employee involvement or job enrichment. He comments that:

> The preponderance of evidence from HUM in the 1990s points towards a theory X interpretation of production systems and organisation of work, which were found to be tightly controlled, with little variety of work or scope for individual initiative (1998:300).

In summary, what assessment can be made of this high-commitment perspective? While there is some support for it from certain high profile cases, such as NUMMI, and possibly from some older workers and for some specific

policies, the balance of evidence seems to suggest that employee commitment is not the unproblematic outcome of particular sets of HRM or production policies. Several reasons for this have emerged. It may be that workplace relations are so engrained in adversarialism that culture change is not possible, that managers and workers seek to manipulate these policies to their advantage, that the incentives on offer do not compensate some workers for the realities of an intensive and highly disciplined work environment, that management are able to ensure a correctly functioning production environment or, finally, that the policies themselves are not in place outside 'showcase' transplant companies.

The tightly-controlled workforce

This perspective sees the social and technical organisation of production employed by Japanese manufacturing companies not as a vehicle for generating high levels of commitment, but as providing the mechanism to enhance the power of management over the workforce. For Wilkinson et al. (1995) Japanisation represents the 'iron fist in the velvet glove', while Delbridge and Turnbull comment:

> Teamworking, job rotation and flexibility are not the means of releasing the untapped reserves of human resourcefulness by increasing employee commitment, participation and involvement as the soft versions of HRM suggest. Rather, they are tools of work intensification and heightened management control (1992:28).

The fragility of the production system within Japanisation, it is argued, requires that operator compliance cannot be risked on the willing co-operation of a committed workforce, but rather, that control and surveillance are necessary elements of the production regime. The social and technical organisation of production associated with Japanisation is viewed as increasing the subordination of labour in three interconnected ways: by extending managerial control over the workforce, through the intensification of the pace of work, and through heightened surveillance at the point of production.

The extension of managerial control of the workforce is seen as stemming from intensive selection procedures aimed at ensuring docile and malleable staff, 'untainted' with a history of unionism or militancy (Delbridge and Turnbull 1992), while the location of factories often in areas of high unemployment acts as a disciplinary measure assuring compliance from any potential malcontents (Kerrin 1998). Similarly, the use of diverse channels of communication, such as team-briefings and company councils is seen as mechanisms for muting any independent voice through trade unions (Stephenson 1996).

Work intensification is linked in part to the use of JIT production systems which reduce the amount of work-in-progress between work stations, thereby thwarting operators' attempts to 'make out' or build up a 'kitty' and eliminating their capacity to create time for themselves at the point of production (Delbridge 1995). In addition, workers may be expected to participate in kaizen activities, small incremental 'improvements' in the

production process, which can have the effect of further paring down any 'non-productive' time in the working day (Fucini and Fucini 1990). A further feature of work intensification is the widespread use of bell-to-bell working to indicate periods of starting and finishing work and breaks. The significance of bell-to-bell working is noted by Danford in his survey of Japanese transplant companies in Wales. He comments that:

> Few analyses of Japanese working practices dwell to any extent on the discipline of bell-to-bell working. Yet the manner in which this is imposed on the transplant workforces makes it one of the most obvious manifestations of the Japanese obsession with reducing idle time and squeezing out sixty minutes of useful work from every worker in every hour (1998b:49).

The use of bell-to-bell working in conjunction with a strict attitude to punctuality and a fast pace of work can lead to operators working significantly harder in Japanese transplants. The extent of work intensification is illustrated by Fucini and Fucini's observation of the Mazda's American factory where workers were involved in their work for 57 seconds out of every minute, compared to the 45-second-a-minute pace of the Big Three worker. At Mazda the working day 'included more work than a Ford or GM workday - 12 seconds every minute, 12 minutes every hour, 96 minutes every 8-hour day, and one 8 hour day more every 5-day week' (Fucini and Fucini 1990:148).

The third objective, that of heightened surveillance at the point of production, stems from total quality manufacturing (TQM) and teamworking. Turning initially to TQM, while some studies have reported an increase pride

and involvement as workers are allocated responsibility for ensuring a fault-free product (Saso 1990), the main contentions surrounding the impact of TQM on the labour process have concerned increased managerial control. The objective of TQM is 'zero defects', which, when translated into factory floor practice, means that deviation from standard operating procedures is rigorously identified and punished. Where TQM is linked with the establishment of an internal customer ethos, operators are made responsible for the quality of the work that they pass on to their workmate. The consequence of this philosophy is that if quality is deficient, then, as a 'customers', the worker receiving the defective work will complain to their colleague. This creates a situation which promotes peer surveillance as it leads to operators policing the performance of their colleagues (Kerrin 1998).

The link between TQM and heightened surveillance has been argued forcefully by Sewell and Wilkinson in relation to Kay Electronics, a British-based, Japanese-owned manufacturing company, where a number of procedures have been implemented to identify, publicise and hold to account operators who produce defective work (Sewell and Wilkinson 1992a, 1992b; Sewell and Wilkinson 1993). Above each operator's work-station is a coloured card indicating the number of faulty operations they had performed the previous day, making individual performance highly visible to managers and workmates alike. A tagging system is used, whereby operators mark their own work to certify that it is of the required quality standard. If any defect is subsequently discovered when it goes through an electronic check at the end of the line, it can be traced back to the individual operator concerned. Sewell

and Wilkinson view the traceability at Kay as analogous to the prison panopticon described by Jeremy Bentham. Just as the prisoners became self-disciplining due to the their constant (perceived) visibility to the warders, so, it is argued, shop floor operators under the continual panoptic eye of electronic and visual surveillance systems will regulate their behaviour in line with managerial demands. The significance of the panoptic model of surveillance is described by Grey:

> The model of the panopticon draws attention to the use of techniques of surveillance which render visible, or potentially visible, the most minute details of individual's behaviour. Panoptic techniques can therefore serve as the basis for interventions in behaviour which is judged to be undesirable or unproductive. Perhaps more importantly, panoptic techniques can have the effect of creating self-disciplined behaviour amongst those subjected to surveillance (1994:479).

It is further argued that increased surveillance stems not only from TQM but also from the pressure created by the delegation of responsibility for targets to workgroups (Garrahan and Stewart 1992; Graham 1995; Sewell and Wilkinson 1992a). For example, Graham contends that teamworking represents a major feature in the 'social control' achieved by Japanese transplants and that it is a key factor in ensuring managerial hegemony. She argues that team working enforces compliance through a hierarchy of three levels of discipline. The first is self-discipline, where workers accept the

responsibilities of team membership. If this fails, peer pressure is used to bring recalcitrant workers back into line. Graham comments:

> Even though 'teaming up' and 'pulling together' were part of SIA's official management philosophy, unkind acts towards team members were not officially discouraged by management and at times were even encouraged' (1995:99).

If this fails, then the third level of discipline, the team leader, exerts his or her authority.

A key question raised by this tightly-controlled perspective is how workers react to this new regime of subordination. A few proponents of this perspective have argued that operators have engaged in some acts of resistance in order to ameliorate the impact of heightened surveillance and the intensification of work (Fucini and Fucini 1990; Graham 1995). However, a significant body of research has claimed that these systems of control and surveillance have not been challenged by operators, and that management has been successful in eliminating many of the covert practices used by workers to gain time and space at the point of production (Delbridge and Turnbull 1992; Sewell and Wilkinson 1992a; Sewell and Wilkinson 1993). It is assumed that dissent has been stifled and that informal resistance remains dormant. As Delbridge et al. comment, 'worker counter-control (in the sense described by Roy and many others) is effectively eliminated' (1992:105).

What are we to make of this Bravermanesque portrayal of impotent workers and omnipotent management? There are problems with this claim. First, in contrast to the over-socialised account of the high-commitment

perspective, this radical viewpoint assumes an under-socialised explanation of workplace behaviour. For Collins:

> under-socialised models of organisation and change fail to acknowledge the extent to which management as an activity, and as an ideology, is delimited by social conflicts and pressures, and so, must be extremely limited accounts of organisation and change (1998:82)

The problem with under-socialised models of change is that they fail to address the essentially social nature of change and the significance of human agency in frustrating or reinterpreting managerial designs. This analysis is relevant to the heightened-control perspective, because while this perspective acknowledges a conflict of interests between workers and management, it relegates human agency to a role of near impotence[3]. It assumes there is no distinction between managerial objectives and policy outcomes.

This tendency to conflate policy intention and outcome is illustrated by the way in which accounts of the demise of resistance are often based on the assumptions that 'read off' the impact of policies from their stated aims, ignoring the possibility that policies may not work as designed and that they may be manipulated by actors in support of their own interests. For example, Delbridge and Turnbull (1992) claim that the extensive selection methods employed by some Japanese transplants provide a mechanism for recruiting a

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[3] Stewart (1996) argues that this management control perspective presents an over-socialised view of labour as it views the institutions of employee representation, especially trade unions, as incorporated by capital. The designation 'under-socialised' is preferred in this study because it provides a way of contrasting the ideological differences underpinning the commitment/compliance standpoints.

compliant workforce, citing Mazda's recruitment procedures at their Flat Rock plant as a case in point. But, there is evidence to suggest that Mazda's workers recruited through this extensive process have been anything but compliant and have challenged managerial authority over a range of issues (Babson 1993; Fucini and Fucini 1990). Similarly, Garrahan and Stewart's study of Nissan which portrays a compliant workforce has been criticised by Allen (1994) for inferring in a mechanistic way the actual effects of policies from their objectives. Allen comments that she 'remains sceptical that Nissan has cracked the old employer problem of turning human beings into robots to the extent that the authors convey' (1994:121).

A further problem with accounts that have emphasised the demise of resistance is the role allocated to technology. There are two points here. First, the surveillance function associated with technology (Sewell and Wilkinson 1992a) is an analysis which is constructed on technological determinism, and does not recognise the mediating influence of human action on technology (Grint and Woolgar 1997). As Wilkinson (1982) has illustrated, management objectives to increase control through technology can be thwarted by workers. More generally, there is little attention given the operational fallibility of technology. In some accounts technology is central to the intensive pace of work and to the monitoring of team and individual performance, but there is no mention of the technology malfunctioning. There is evidence to suggest however, that the production process within Japanese transplants can experience difficulties arising from with unreliable technology (Fucini and Fucini 1990; Grant 1996). It may be the case therefore that the reliance on

technology as a key element in the managerial control processes is far from unproblematic.

The case for resurrecting worker resistance in the discourse of control and surveillance has been made by several commentators (Ackroyd and Thompson 1999; Stewart 1996; Stewart 1998; Thompson and Ackroyd 1995). Stewart agues that despite the fact that the control perspective has different ideological underpinnings from the high commitment approach, they both present an unacceptable teleological account of employee relations in that they stress workplace consensus, be it based upon quiescence or subordination. He suggests that 'Japanisation' research needs to look beyond consensus by recognising the managerial initiatives do not operate in a social vacuum, that they are likely to be challenged by labour and that 'conflicts and social struggles must be seen to be inherently part of Japanese employment relations' (1996:16).

Similarly, in a wide-ranging critique of the tightly-controlled workforce perspective, Thompson and Ackroyd (1995) argue that within a capitalist mode of production, workplace relations cannot be adequately understood and theorised without the recognition of worker action in pursuit of their particular interests. Resistance represents a significant feature within the historical development of the labour process, and despite a series of managerial innovations to impose control over the shopfloor, employees have used formal and informal ways to renegotiate the effort-bargain and to gain some control over their own working time. Thompson and Ackroyd suggest that to deny the presence of effective resistance is to fall into the trap of

accepting the assertions of managerial literature and then re-interpreting these within a different ideological framework. Whilst recognising the impact of economic, political and technological change in constraining worker action, Thompson and Ackroyd claim that the basic conditions for resistance remain. In particular, workers retain their ingenuity in subverting control systems and use their knowledge of the production process to buy pockets of time and space on the shop floor. This leads Thompson and Ackroyd to argue that there is a need to 'recognise that innovatory employee behaviour will continue to subvert managerial regimes' (1995:629).

In summary, what assessment can be made of this control perspective? There seems little doubt the technical and social organisation of production associated with Japanisation has the potential to extend managerial control and surveillance and to intensify the pace of work. In some cases this may have been at least partially achieved. The extensive marginalisation of resistance is however somewhat more problematic. In particular, a distinction needs to be drawn between the intention and outcome of policies; attention needs to be paid to the impact of human action and technical fallibility upon managerial objectives. There is a growing body of evidence both from Britain (Broad 1994a; Grant 1996; Palmer 1996; Stephenson 1996) and from America (Babson 1993; Babson 1996; Fucini and Fucini 1990; Graham 1994; Graham 1995), which illustrates that workers have managed to mobilise and sustain some challenges to this new regime of subordination. This suggests that workplace discipline is not solely shaped by managements' actions and that the factory floor continues to be a 'frontier of control' (Edwards 1990).

Control, compliance and resistance: The transplant as a 'frontier of control'.

The term 'frontier of control ' is used by Edwards to capture the dynamic nature of workplace relations. Control systems can be viewed as processes through which management attempt to negotiate order in the workplace. Management cannot simply rely on workers doing as they are told; rather they are actively involved in the supervision and motivation of labour in an attempt to ensure that their objectives are met. How successful management is in achieving this will depend upon factors such as the technical organisation of production, the nature of product and labour markets and also by the histories of particular workplaces, workgroups and industries (Edwards 1986). It is these contingent factors that characterise workplace relations as a frontier because outcome of managerial policies is often indeterminate, with their impact being mediated by previous and current structural and firm-specific factors.

In the context of the Japanisation debate this analysis of the factory floor as a frontier of control generates a requirement to look beyond over-or under-socialised accounts of workplace relations and recognise the contingent nature of managerial hegemony and worker dissent. This is well illustrated by Stephenson's study of the varying fortunes of trade unions in two Japanese transplants. She argues that in one company, Nissan, the influence of organised labour has been marginalized as traditional trade union functions of 'communication and problem solving have been replaced by the team leader, the company council and the kaizen meeting' (Stephenson 1996:219).

By contrast, at Ikeda-Hoover trade unionism proved more effective. Ikeda-Hoover is a first tier supplier to Nissan, delivering parts every fifteen minutes to the Nissan production line, with stringent penalties for non-compliance. A strongly unionised group of skilled workers, aware that disruptions to JIT could present problems for Ikeda-Hoover, used this knowledge to extract concessions from management. Stephenson's study is important in that it explores the capacity of workers to engage in dissent both through factors at the point of production and also through influences external to the factory floor, such as labour and product markets.

A further example of successful worker opposition through the institutional channels of trade union representation occurred at Mazda's American plant. Here the company rhetoric of 'welfare paternalism' was contradicted by the actions of management, sowing the seeds of worker dissent. At the Flat Rock plant the lack of any respite from production activities became a major focus of worker resistance, especially as the actual working conditions deviated from the promised work environment. As Fucini and Fucini observe:

> The company talked about treating workers with respect and dignity and making everyone part of the Mazda family, while it refused to give them fans and cold drinks on a 90-degree day (1990:170).

A further focus of worker dissatisfaction stemming from the high levels of work effort at Mazda was health and safety. As consequence of this growing worker dissatisfaction at the Mazda plant a more militant group of union officials were elected with a mandate of gaining concessions on health and safety and to

obtain input from workers and the union into shop floor organisation (Babson 1993).

Successful worker resistance to highly intensive work regimes is not limited to formal representation. Graham's (1995) study of the non-unionised Subaru plant in America illustrates how a number of individual and collective strategies were employed successfully by workers, both to gain some respite from the intensive pace of work and also to counter what were seen as unacceptable managerial demands such as compulsory overtime. These actions ranged from veiled and symbolic protest, such as the ridiculing of company rituals, to direct confrontation including leaving the moving line without permission. However, these strategies of resistance were set against powerful management control techniques, leading Graham to conclude that both compliance and resistance were features of the Subaru shop floor. Further support for the existence of worker resistance in non-unionised companies comes from my previous research based on interviews with British and Japanese managers in three Japanese transplants located in two 'new' towns (Palmer 1996). In each of the three companies workers engaged in strategies which challenged management's right to determine unilaterally levels of effort and conditions of employment. In some instances worker dissent took the form of quitting and absenteeism. On other occasions resistance involved contesting managerial surveillance strategies more directly. For example, in one of the case study companies management introduced a policy of record cards above individuals' job stations, indicating

how many mistakes they had made that day. The production manager commented that this policy:

> Caused problems to start with and then after the initial reaction it was ignored. People would say "you had two today, I only had one", and that was it. It became more of a joke. It didn't work so we scrapped it (Palmer 1996:138)

More broadly, informal employee action in all three companies meant that management were forced into significant policy amendments.

This issue of Japanese transplants having to take ongoing and remedial action to manage workplace relations is most clearly illustrated in Elger and Smith's studies of transplant companies in Telford (1998). Their research shows how, in the context of a buoyant labour market, tight workplace discipline and perceived managerial 'unfairness', the companies had difficulty in recruiting, retaining and regulating employees. Management in the transplant companies were forced into a number of policy amendments and developments in order to obtain a 'mandate' to manage. This mandate did not give management complete control over workplace relations but, according to the authors, represents 'a tacitly negotiated pattern of qualified compliance with management prerogatives' (1998:192).

What emerges therefore from case study findings is that resistance in Japanese transplants has not been totally marginalised. Workers have engaged in resistance both through formal channels of labour representation and through more informal means. Management still have to contend with the 'problem' of labour control. That is not to argue that worker resistance will be

a feature of every transplant company. In some instances management may have been successful in stifling resistance or overt dissent. One such example is provided by Delbridge's (1998) study of Nippon CTV. Through a short period of participant observation, he illustrates how a JIT/TQM regime was successful in marginalising employee resistance. Given the strictures and criticisms levied against the demise of resistance in the previous section, why should Delbridge's account be accepted? The answer is twofold. First, the nature of the data, based on ethnographic research, means that Delbridge was able to record and report actual workplace practice. More significantly, Delbridge is able to account for the context in which managerial control systems were able to operate effectively. The key to managerial control at Nippon was the production environment which was characterised by the steady flow of reliable parts under the company's 'bounded JIT' system, by reliable technology and by a predictable demand schedule as a supplier to the company's own commercial division. Delbridge argues that this stable production environment allows management to isolate the factory floor from uncertainty thus closing down the gaps and spaces at the point of production which workers may have exploited to their own advantage.

Delbridge's analysis is also valuable in raising the role of management in the negotiation of order on the shop-floor. He argues that at the junior management level, supervisors have a key role in maintaining this climate of discipline. The predictability of production and support for the supervisor from senior managers meant that supervisors did not have to enter into any informal negotiations with workers to achieve production targets.

Consequently supervisors kept a tight rein on the shop-floor and were instrumental in marginalising worker 'misbehaviour' (Delbridge and Lowe1997). Within this overall climate of managerial control, workers at Nippon were still able to engage in minor rule-breaking, but here again this was with the tacit approval of management. Where workers' opportunistic behaviour would help the achievement of targets then supervisors and other managers would either conspire with workers or 'turn-a-blind-eye' to their activities. Moreover, Delbridge contends that this pattern of indulgence was also practised by senior managers who chose to ignore minor rule-breaking, as they felt that to punish every incident of misbehaviour may provoke worker antagonism.

In summary, this section has illustrated that both resistance and compliance exist in Japanese transplants. What emerges is that neither commitment nor compliance is the necessary outcome of specific sets of managerial policies. The key points to understanding the nature of worker-management relations are: the need to study control systems in action, to acknowledge that their impact can be mediated by factors both internal and external to the point of production and to recognise the influence of a range of actors on the labour process. This contingent nature of workplace relations is one of the key themes addressed in the following section.

Summing up and moving on

Summing up

The detailed consideration of case study evidence has produced a complex and varied picture of workplace relations in Japanese transplants. By comparing cases it is possible to identify clusters of policies which are associated with commitment, compliance and resistance, These are outlined in table two.

Table 2.

Factors associated with varying employee responses.

Commitment	Compliance	Resistance
Consistent application of HRM policies	High levels of unemployment in the locality	Tensions between policy and practice
Employee voice on wide range of bargaining issues	Isolation of production process from external and internal uncertainty	Young workforce
Opportunities to participate freely in problem solving activities	Managerial indulgency	Japanese management suspicion of 'local' industrial relations
	JIT/TQM production methods	Lack of managerial competence
	Supervisors enforce workplace rules	Supplier subservience to major customer
		Independent trade union
		Productivity targets inconsistent with resources

This table provides a means of classifying the features most commonly associated with particular types of employee response. Where features in one particular column predominate, the workplace is likely to be characterised by that employee response. It is also important to recognise the broad range of contingent features, and that these include factors not only at the point of production but also wider commercial considerations such as product and labour markets. In addition, the actions and motives of supervisors and managers need to be acknowledged.

It is important to distinguish between this contingency analysis and the previously criticised 'tightly-controlled workforce' approach which assumed that the outcome of policies could be derived from their objectives. There are a number of important distinctions between these two approaches. The contingent analysis does not infer that compliance/commitment/resistance are mutually exclusive within one setting, nor does it claim that where features in one column prevail, all employee responses will be of that single dimension. Furthermore, it is acknowledged that the factors identified in table two have their own, sometimes contradictory, internal dynamics. Thus, for example, the message of commitment portrayed by single-status can be contradicted by a disregard for health and safety practice. What the analysis in table two does represent is progress, both in moving away from simple over-or under-socialised accounts of workplace relations and also by providing, at least, a tentative explanation for the myriad of reported responses relating to the labour process in Japanese manufacturing transplants.

Moving on

In order to take the Japanisation debate forward, it is necessary not merely to provide a summary and assessment of case study evidence but crucially to provide an analytical framework to explain this diversity of workplace relations. As Thompson argues it is important to avoid the position where the abandonment of theory 'is leading inexorably towards the revival of the largely dead body of one-off plant-level studies' (1990:108).

The two currently published ethnographic accounts of the labour process in Japanese transplants do combine the detail of shopfloor relations with an overall conceptual framework. Although these offer useful progress in both detail and conceptual understanding, both have shortcomings. In a study of Subaru, Graham (1993, 1994, 1995) formulates seven dimensions of either technical or social control with which to analyse data generated through an extensive period of covert participant observation. While this provides an interesting and innovative form of analysis, it neglects two key points. First, Graham ignores factors external to the point of production; these factors such as labour and product markets can, as has been demonstrated earlier, play a key influence on workplace relations. Second, other key actors apart from workers are confined to the margins. The motives of managers are not explored, while supervisors are largely relegated to the role of 'little corporals' implementing the wishes of management.

The second account to integrate the detail of shopfloor relations within an analytical framework is Delbridge's (Delbridge and Lowe 1997; Delbridge1998) study of Nippon CTV. As discussed above, Delbridge links

management's capacity to marginalise resistance with their ability to isolate the shop floor from uncertainties. This study is particularly valuable as it sets the operation of surveillance systems within the organisation's product market environment and also explores the role of supervisors and managers in maintaining workplace order. What Delbridge's account does not provide however, is any comprehensive analysis of the context and operation of HRM policies. Scant attention is given to issues such as single-status, employment security or company communication strategies. In a separate study of Nippon some ten years earlier, significant claims were made for the importance of the company council in generating co-operative worker-management relations (Trevor 1988). Whilst recognising that the council might no longer be in operation, the lack of any reference to its existence by Delbridge is indicative of the low priority he allocates to Nippon's HRM policies.

What then would a satisfactory analytical framework of workplace relations address? Drawing upon the debates raised in this chapter and the shortcomings in current analytical models it is possible to identify four key points which are central to a comprehensive framework:

- Any analytical framework should avoid either oversocialised or undersocialised accounts of workplace behaviour.
- It should embrace an analysis that includes factors both external to the point of production in addition to firm specific issues.
- It needs to include the motives and actions of a range of actors not just those of operators.

- It needs to recognise the contingent nature of resistance, compliance and consent.

It is an aim of this thesis to develop a comprehensive analytical framework for understanding the labour process in Japanese transplants. A framework that meets the four requirements set out above can be provided by embeddedness. It is the development of the embeddedness framework that forms the basis of the next chapter.

Chapter Two

The Embeddedness Framework

Having set out the requirements for an adequate analytical framework to explore the labour process in Japanese manufacturing transplants, this chapter develops such a framework. The framework chosen is based on the concept of embeddedness. The application of the term 'embeddedness' to workplace relations is not entirely new. It has been used in the general meaning of the word to explain how workplace relations are 'embedded' in the realities of local labour markets (Elger and Smith 1998), and how worker resistance is embedded in the manner in which they view themselves as subjects (Collinson 1994; Gottfried 1994). However, within this study the term 'embeddedness' is taken to have a more specific meaning as defined by Granovetter (1985).

The argument presented here is that the embeddedness framework offers a suitable structure for analysing the labour process in Japanese transplants as it fulfils the requirements identified at the end of the previous chapter. The framework helps to resolve the shortcomings in current theoretical perspectives and provides a set of analytical categories through which case study material can be explored. Therefore, the link between the current and the previous chapter is that this chapter presents a framework which attempts to remedy the deficiencies discussed in chapter one.

In order to both outline the embeddedness framework and justify its value, the chapter is organized in the following manner. It begins with a discussion of the antecedents and principles of embeddedness. Then, following Granovetter's model, two dimensions of embeddedness are identified, namely networks and social relations. The chapter outlines and discusses four types of network structure and three categories of social relations that impact on the labour process. It concludes with a diagrammatical representation of the embeddedness model and a discussion of how this model fulfils the requirements identified in the conclusion of the previous chapter

Embeddedness: antecedents, principles and application

There are two key interrelated elements to Granovetter's conception of embeddedness: the existence of formal and informal structures and ties which bind actors together, what Granovetter labels 'networks', and the interaction and influence of individuals within these structures, which he refers to as 'social' or 'personal' relations. In using these concepts Granovetter built upon the work of a number of sociologists in the 1970s and early 1980s who were developing network theory as a way of explaining social interaction within groups (Burt 1980; Burt 1982). The thrust of these sociological explorations was to develop analytical approaches which relied upon algebraic formulations to identify differing patterns of network structures and to analyse the interaction of actors within them (Burt 1980; Burt 1982; Knoke and Kuklinski 1982). This early analysis represented an attempt to reconcile the

debate between structure and agency as determinants of action. Network theory (as it was then named) recognised the capacity of individuals to exert influence and impose meaning on their actions, but also that these actions were set within broader social structures within which individual's were located. Burt comments that 'actors are purposeful under social structural constraints' (1982:330) and that network analysis provides a 'connection between micro and macro level social theory' (1980:79). It was also argued that network theory could provide a useful vehicle for empirical investigation of any situation that involved individuals in social interaction, from small informal gatherings to corporate groups. Network analysis was used to explore relationships as diverse as the study of the 'black economy' in a Swedish village (Hansen 1981) to sanctions applied to 'deviant' members in primitive societies (Southard 1981).

The use of network analysis by sociologists appeared to atrophy in the early 1980's. Interest in networks was revitalized with the publication of Granovetter's seminal article 'Economic action and social structure: the problem of embeddedness' (1985). This differed from previous work in that it focused specifically on interaction between individuals and groups within and between firms. Additionally, Granovetter coined the term 'embeddedness' as a means of explaining and exploring economic relationships. By 'embeddedness' he refers to the manner in which 'attempts at purposeful action are embedded in concrete, ongoing systems of social relations' (1985:487). Embeddedness can be viewed as having two interconnected dimensions. One is the formal and informal systems or structures which are

present in economic life and through which transactions are conducted. The name given to these structures by Granovetter is networks. The second dimension of embeddedness is social relations. In part, social relations refers to the ongoing pattern of interaction within networks. Also, implicit in Granovetter's use of the term social relations, is the ability of individuals to shape the outcomes of network transactions, for example through knowledge or self-interest. So, the outcomes of networks cannot be determined from their existence, rather they are dependent upon the interplay of social relations between constituents. As Granovetter observes, networks can be characterised by trust, conflict or malfeasance. Following this line of argument, social relations will be used in this thesis to refer to the purposeful action of constituents which takes place within network structures.

Granovetter develops the concept of embeddedness as an alternative to what he describes as 'over-socialised' and 'under-socialised' accounts of economic behaviour. By 'under-socialised' he refers to the analysis offered by classical and neo-classical economists which treat individuals as atomised actors influenced only by rational economic decision making. By 'over-socialised' he alludes to arguments which infer current, past and future behaviour of individuals from broad social, political or economic categories, to which they are viewed as 'belonging'. He argues that:

> under- and over-socialised approaches are paradoxically similar in their neglect of ongoing social structures of social relations (1985:481)

Granovetter contends that the concept of embeddedness recognises the manner in which social structures can shape behaviour whilst avoiding the pitfalls of over-deterministic or reductionist perspectives.

In order to 'operationalise' his use of embeddedness he formulates a critique of markets and hierarchies as means of conducting transactions. An analysis based on markets, he argues, represent an under-socialised account of exchange because it focuses solely on the current price of goods and services and is underpinned by a view of action premised solely on economic rationality. It is an analysis that ignores the significance of social relations between individuals in trading organisations and the history of past exchanges between these individuals. Granovetter observes that:

> It is, for example, a commonplace in the literature on industrial purchasing that buying and selling relationships rarely approximate to the spot-market model of classical theory.....A moment's reflection will suggest several reasons for this behaviour, including the costs associated with searching for new suppliers and establishing new relationships, the fact that users are likely to prefer sources, and the likelihood that the buyer has established personal relationships that he values with representatives of the supplying firm (1985:496).

Commenting on the concept of hierarchies developed by Williamson's transaction-cost analysis, Granovetter argues that this can produce an over-socialised view of behaviour, in that it is based on the understanding that participants within an organisation share and act upon a common interest which is defined by management. Granovetter comments that:

> The over-socialised view that orders within a hierarchy elicit easy obedience and that employees internalise the interests of the firm, suppressing any conflict of their own, cannot stand scrutiny (Granovetter 1985:501)

While not denying the operation of markets and hierarchies, Granovetter argues that many transactions are more appropriately pursued within inter-firm networks and are subject to personal interactions within these networks; embeddedness, it is contended, permeates all aspects of economic transactions.

Granovetter's analysis stimulated a shift in emphasis from research into social networks to that of industrial networks (Hakansson and Johanson 1993). It has stimulated a significant amount of interest from scholars of organizational studies and business management seeking to explore the rapid growth of inter-firm trading which has been stimulated by developments in technology, the pursuit of organizational flexibility and by broader economic and political change (Dicken 1998; Parker 1998). The shift in emphasis from social to industrial networks has stimulated research into such diverse areas as managerial practice within the British N.H.S. (Ferlie and Pettigrew 1996), supply-chain management (Harland 1996), and post-socialist structures in the former Communist states of Eastern Europe (Grabher and Stark 1997) Indeed, the use of network analysis has become so ubiquitous among researchers investigating inter-firm relations, that the editor of one text on networks felt obliged to use the introduction to justify the rationale for 'another book on networks' (Grabher 1993:i).

In summary, this section has traced the antecedents of embeddedness, explained the embeddedness model as developed by Granovetter and explored briefly how this model has been applied in recent academic work. Despite the mushrooming popularity of embeddedness, Granovetter's analysis that has not been applied to studies of management-worker interaction. This raises questions about its applicability to workplace relations: it is this issue that the chapter addresses next.

The embeddedness framework and the labour process: explanation and justification.

There are clear grounds for arguing that the concept of embeddedness, as outlined by Granovetter, has relevance to the labour process. It has long been accepted that employee behaviour cannot be simply reduced to under-socialised accounts based on the atomised actions of individuals and premised solely on economic rationality (Mayo 1933; Roethlisberger and Dickson 1964). Also, the danger of over-socialised explanations of employee actions based on broad social categories such as culture has been recognised (Clegg 1990). Furthermore, the significance of structures both internal and external to the firm, in shaping the labour process has long been established, as illustrated by Lupton's (1963) study of the interaction of product and labour markets and the internal organisation of production. Similarly, the significance of social relations in generating trust or dissent is exemplified by, for example, Edwards' argument that workplace relations 'have histories of their own' (1988:202), with worker attitudes arising out of

and developing in response to the transmission of internally constructed social relations.

In order to use the concept of embeddedness it is important not only to establish that it has broad relevance to the labour process, but also to devise a sustainable framework which can be applied to workplace relations. To do this the two key concepts underpinning embeddedness, namely networks and social relations, need to be discussed in more detail and developed further to provide a specific and rigorous framework for labour process analysis. The following two sections provide an empirical outline and justification for the embeddedness framework with reference to case studies of workplace behaviour. The empirical material used, deliberately excludes data on Japanese transplants. This approach has been chosen in order to locate the embeddedness framework within historically recognised debates concerning workplace relations. It also acknowledges arguments which suggest that the social relations which underpin Japanisation have an essential continuity with other production regimes (Danford 1998b).

Networks

In order to use network analysis, the question of what constitutes a network needs to be addressed. At the broadest level:

> The notion of a network can be employed to characterize any set of recurring ties (e.g. resource, friendship, informational ties) amongst a set of nodes (e.g. individuals, groups, organizations, information systems and so on (Fombrun 1982, cited Ebers, 1997:15).

Although this generic definition is helpful in understanding what constitutes a network across a range of disciplines and contexts, a more precise set of descriptors is required in order to apply network analysis to a business environment. Following Hakansson (1987), networks can be viewed as consisting of three interlinked dimensions. Although Hakansson's analysis was devised for industrial networks, the three dimensions are equally appropriate for labour process analysis. First, they consist of actors, who can vary from individuals to groups of companies. This breadth of recognition is significant in the context of workplace relations because it allows an analysis of the factors influencing the labour process to incorporate individual action but is not constrained by this and can also include corporate and inter-firm influences. A second dimension of networks is that they concern both 'the transformation act' and the 'transaction act'. Again, this analysis recognises the essential nature of the labour process. The transformation act involves the activities of workers, using tools and physical labour, to transform materials into products for exchange or sale (Thompson 1989). The transaction act involves the process of establishing the terms and conditions under which labour is put to work, and also the interaction between constituents in the value chain through the buying and selling of goods. A final dimension of networks is that they involve the use, control and knowledge of physical and human resources and that there is a degree of mutual dependence. This issue of resources and mutual dependence underlines the basic contradictory nature of the labour process. On the one hand, workers and managers have stocks of knowledge and expertise which they might seek to use to their own

advantage. But, also, there is a point beyond which seeking self-interest becomes counter-productive, as there is normally a basic shared concern in the firm's continuance in business.

The principles relating to industrial networks therefore seem specifically applicable to workplace relations. The question remains as whether to classify workplace relations as a single network process characterised by a number of activity chains (Hakansson and Johanson 1993), or to delineate a number of networks which impact upon the point of production. This latter approach has been adopted here in order to allow the varying influences upon the labour process to be traced and evaluated more effectively. Also, the delineation of networks is more valuable in facilitating comparison with other studies. There is the danger that in identifying a number of separate networks the analysis will present a fragmented and compartmentalised view. To avoid this the approach taken will be to recognise the discreet but interrelated nature of these networks

This raises the question of what network structures are appropriate. There is a body of evidence that indicates product markets and buyer-supplier relations are significant factors in influencing workplace relations (Kelly 1985; Lupton 1963), therefore one suggested category is that of commercial networks. At the point of production the significance of both official and informal interactions between workers, and also between workers and supervisors, in shaping the labour process has been identified (Burawoy 1979; Gillespie 1993; Roy 1954), leading to two further categories, namely workgroup networks and supervisory networks. A final issue concerns the way

in which management seek to direct and control the workforce through reward, sanction, motivation etc. In part, this is contained within and emerges out of workgroup and supervisory networks. But, this process of direction and control is also shaped by the written and unwritten policies and practices which structure the employment relationship. These written policies, concerning pay, conditions of service, grievance procedures etc. constitute the formal contract. The unwritten policies and practices comprise the psychological contract (Rousseau 1995). The unwritten psychological contract is perceptions of both the employer and employee of the expectations and commitments which characterise the employment relationship (Mullins 1996). Just as the contents of formal contact are often determined by the personnel department, so personnel policy and practice has a central influence upon the psychological contract (Grant 1999; Rousseau 1995). Thus, the final network structure presented in this framework is the personnel network.

The section now considers evidence from recent and traditional material to both justify these four network structures and to identify some of the impact that each of them has played on the labour process.

Workgroup networks

It has long been recognised that workgroups and workgroup norms have played a major influence on workplace relations (Roethlisberger and Dickson 1964). As the Hawthorne experiments of more than fifty years ago illustrated, one of the early managerial concerns was the ability of informal workgroups to exert control over effort levels, often in conflict with the

interests of management (Gillespie 1993). Workers in the bank wiring room at the Hawthorne plant of the Western Electric Company developed a series of informal group norms concerning output levels, resisting managerial attempts to increase productivity. Similar workgroup power developed in some industries in the context of the relatively tight labour markets of the 1950s and 1960s. Beynon cites one such example of the workgroup on the 'Wet Deck' at Ford's Halewood plant:

> if there was a problem on the Wet Deck, a manning problem, speed-up, if the foreman had stepped out of line, they always had a comeback. They could sand the paint off the style lines - the fine edges of the body that gave it its distinctive shape. And nobody could know (1973:141).

It is perhaps significant that one agenda of the Donovan Commission (1968) was to explore ways in which management might regain control of the shop-floor. The changing political and economic environment of the past twenty years has increased management's control over effort-levels (Metcalf 1992), however, that is not to argue that workers have become totally disempowered or completely lost the capacity to resist managerial initiatives which they judge not to be in their own interests (Gabriel 1988; Scott 1994).

Where workgroups exert a collective purpose this does not always operate against the interests of management. In some cases workgroup action can be beneficial for management. For example, Harris (1987), in an analysis of workgroups in the petrochemical industry, concludes that one of the outstanding factors was the extent to which there was willing co-operation

by the workgroup with management in meeting the functional requirements of production.

The most recent development relating to workgroup has been the growth in the use of team working. Several key points are relevant to this development. First, it has largely been a managerially sponsored initiative, based on the premise that some controlled delegation of responsibility and autonomy can enhance productivity. Such developments have often been linked to the physical reorganisation of production, such as cellular manufacturing, and also on occasions to cutbacks in staff (Danford 1998a). In this sense it is philosophically different to the Quality of Working Life (QWL) initiatives of the 1970s, which were more concerned with achieving workforce stability. Second, team working can take a number of distinct forms. Buchanan (1994), identifies two different configurations of team working, one based on the Anglo-Scandinavian model and another on the Japanese model, both of which delegate varying levels of responsibility to workers and have different physical arrangements. Finally, team working can have disparate effects on the workforce. Some studies have emphasised team working as a means of work intensification (Danford, 1998), some have stressed the potential benefits for employees (Wright and Edwards 1998), whilst yet others have argued that workers are enjoying benefits from teamwork while at the same time working harder (Clark 1993).

While the preceding analysis has suggested that workgroups have a strong impact on the labour process, it is not claimed that workers always present a coherent group. For example, workers at the Wye clothing company

studied by Lupton (1963) failed to develop any collective control system due to a range of factors such as the individualisation of pay rates, the layout of production and the minute sub-division of tasks. What is being argued here is that in a large number of workplaces the workgroup network plays a significant role in fashioning day-to-day shop floor activity.

Supervisory Networks

By 'supervisory networks' it is meant the relationships that supervisors develop with other members of an organisation and how these relationships impact on the labour process. One important influence on supervisory networks is the views and attitudes of managers towards supervisors. Again, the Hawthorne experiments provide an early illustration of this, as Gillespie observes:

> A new group of personnel managers now focused their attention on the social relationships between workers and their supervisors, convinced that a change in the supervisors' treatment of subordinates would improve employee morale and hence production. As they saw it, the most practical way to intervene in the employee-supervisor relationship was to concentrate on re-defining the role of the supervisor and then to inculcate that role through a rigorous supervisory training programme. The Industrial Research Division at Hawthorne was established to study supervisors as well as workers. (1993:143).

In other cases managers' influence on the actions of supervisors have much less benign consequences for the workforce. For example, in the case of the shoe company studied by Armstrong, supervisors were not highly regarded by senior managers. Supervisors were assessed on their ability to get work out of the workforce and their capacity to do this was monitored closely by management. This led supervisors to impose a rigorous regime of discipline on the shop-floor, which for the workforce 'involved definite deprivations: the needless (from any point of view) loss of natural breaks in production, the unpaid performance of purely cosmetic work and so on' (1983:352). This is not to suggest that supervisors are always successful in imposing their will on the workforce. Beynon's (1973) study of Ford in the 1970s documents a struggle between workers and supervisors to gain control of the shop-floor, a contest in which the workforce were able to set limits to supervisory control through the use of official and unofficial collective action.

There are of course strategies other than adversarialism or 'human relations' available to supervisors in their dealings with workers. In some cases supervisors may indulge in cooperation or collusion with workers. This can take a range of forms including the lenient, or non-application of workplace rules (Burawoy 1979) and the education of workers in the circumvention of formal procedures (Bensman and Gerver 1963; Ditton 1977). Supervisors practice these forms of indulgency as a way of giving workers some interest in the job, as a method of getting work done and as a means of easing the difficulties of supervision (Edwards 1988).

One final point concerning supervisory networks is that roles and relationships within them are not static. Management may seek to amend the duties of supervisors to mesh with business objectives (Nichols and Beynon 1977). The recent development of interest in HRM has seen moves to devolve greater responsibility for personnel matters to supervisors. In other cases, management may seek a change in the way supervisors 'control' the workers. Danford cites one such example in the context of managerial attempts to reduce the porosity of the working day; a foreman in the CarPress plant comments:

> My instructions are to push them to the limit. Just this morning my manager marched up to me and said he'd seen one of my men talking to a mate down the other end of the plant. And he wanted to know what am I going to do about it, why aren't I disciplining him? That's the key change in my job. It's gone from using the skill of talking and coaxing people to the pure use of discipline all the time (1998a:176).

Personnel networks

'Personnel networks' indicate the manner in which personnel polices impact on workers. This raises the question of whether personnel policies should be cited as networks. This can be resolved by reference to the three characteristics of networks (Hakansson 1987) discussed earlier in this chapter. First, networks were seen to involve a range of actors. This is certainly the case for personnel policies, which can be established at any level from plant to corporate organisation. Similarly, the actual management of

personnel policies can be conducted on a day-to-day basis by staff from differing strata and from various functional departments in the company, including personnel managers, production managers and supervisors. As Mullins observes ' it is clear then, that the personnel function is a shared responsibility among top managers, line managers, supervisors and the HR manager (1999:687). The second feature of networks was the concern with the acts of transformation and transaction. Personnel policies provide the link between transformation and transaction in that they establish the framework of conditions under which labour power is purchased, such as wages and working time (the transaction act), and they set down, in general terms, the obligations expected from this purchased labour such as what the worker is engaged to do and levels of effort[4] (the transformation act). Third, networks are concerned with the control of human resources and involve some degree of mutual dependence. Personnel networks are directly concerned with human resources. The interpretation of mutual dependence depends on the political perspective applied. A positive perspective is attached to personnel policies by managerial texts that stress mutuality of interest, as the following quotation from Torrington and Hall illustrates:

> Personnel management is a series of activities which: first enables working people and their businesses which uses their skills to agree about the objectives and nature of the working relationship and, secondly, ensures that the agreement is fulfilled. Only by satisfying the

[4] It is recognised that the employment contract cannot specify all aspects of the effort-bargain, nonetheless it does provide a framework for the transformation of purchased labour power into actual labour.

> needs of the individual contributor will the business obtain the commitment to organisational objectives they need for organisational success, and only by contributing to organisational success will individuals be able to satisfy their personal employment needs (1998:20).

Set against this, Richard Edwards (1979), writing from a Marxist viewpoint, stresses the significance of bureaucratic control in maintaining management hegemony in the modern organisation. This category of bureaucratic control contains many elements of personnel policies, as it refers to the way in which rules relating to promotion, to conditions of service and to dispute resolution are codified and subject to joint regulation. This, according to Edwards, allows disputes to be resolved away from the point of production, and in a manner that dissipates conflict by reference to systems and procedures which are dressed in a veneer of fairness. Although Edwards' view offers a radically different standpoint from that of HRM advocates, both perspectives share a similar view of personnel policies as providing a crucial underpinning for the commercial survival of the organisation.

Arguably, the significance of personnel networks has increased over the last two decades with the gradual replacement of the 'fire-fighting' approach of personnel management by the more strategic vision of Human Resource Management. The extent of this substitution, and the exact meaning and nature of HRM have been the subject of wide debate. Despite this, extensive claims have been made by advocates of HRM which suggest that it

can contribute both to business success and to an enrichment of the working life of employees (Gratton 2000)

What assessment can be made of these claims that HRM policies produce a positive-sum outcome? There is recent survey evidence to suggest that firms with a coherent package of HRM policies can improve their performance (Guest and Hoque 1996; Hoque 1999; Wright et al. 1999). The key factor in achieving business success seems to be ensuring that supportive bundles of HRM policies are in place, rather than the faddish application of isolated elements of them (Hoque 1999). Set against this is a body of case study literature suggesting that the outcomes for employees are much less positive. The variant of HRM most closely associated with positive outcomes for employees is 'soft' HRM, which emphases employee involvement and commitment, rather than the more business-driven rationally calculative 'hard' HRM. In assessing the actual impact of policies, Turnbull and Wass (1998) argue that it is important to distinguish between the rhetoric of soft HRM and the reality of these policies for workers. Drawing on a case study of a high street retailer which claims to have an extensive array of soft HRM policies, the researchers found that job satisfaction was low, that staff regarded communication with management as poor and that the internal labour market was segmented and gendered. Similarly, research by Truss et al (1996) of companies in the 'Leading Edge Forum' (a group of high-profile national businesses with a strong commitment to HRM), concluded that 'even if the rhetoric of HRM is soft, the reality is always hard, with the interests of the organisation always prevailing over those of the individual' (1996:69). It

would appear, therefore, that HRM has not necessarily led to a reconfiguration of workplace relations even amongst firms with a seemingly strong HRM commitment.

Moreover, there is some evidence to suggest that HRM can lead to increasing workplace antagonism rather than commitment, especially where the promises of soft HRM are not delivered. For example, in a study of HRM on greenfield sites, Leopold and Hallier (1995) found that initial recruitment and selection exercises often raised employees' work and employment expectations, but that these were not always fulfilled. Consequently, the companies had high labour turnover and a disgruntled workforce. In addition, the study also found that HRM policies contained contradictions which provided management with problems. The recruitment of a young workforce did not prove the malleable and committed employees that management anticipated; rather, they proved to be the source of significant anti-social behaviour on the shop-floor.

The above discussion is not presented in any way as a resolution of the various HRM controversies. It does however illustrate that personnel networks can exert an important influence on workplace relations. They provide a point of contact between workers and managers and supervisors at various levels of the organisational hierarchy. Significantly, the outcome of personnel policies does not always accord with managerial aspirations.

Commercial networks

'Commercial networks' as adduced here refer to the ways in which relations between firms, their customers and their suppliers impact upon the labour process. There are several themes which emerge from the literature. One of these is the significance of product markets in determining workers' attempts to manipulate the effort-bargain. At the broadest level increased product market competition has been one factor responsible for reducing the bargaining power of trade unions during the 1980s and 1990s allowing management to push through initiatives aimed at reducing the porosity of the working day (Darlington 1994).

Historically, product markets have also been linked to the ability of workers to extend their influence over shop-floor effort-bargaining. For example, Lupton (1963) found that the highly competitive product market that was a feature of the Wye Garment factory militated against worker attempts to engineer some control over the labour process as, in these circumstances, management are more likely to attempt to control labour costs more closely and to clamp down on any unofficial practices which might conflict with 'getting the work out'. By contrast, more oligopolistic markets are likely to engender a more relaxed attitude by management to worker attempts to manipulate the effort-bargain, as Burawoy's study of Allied Engineering illustrated (Kelly 1985). This relationship between product markets and effort bargain should be viewed as a general tendency and not an exact correlation, as competitive product markets do not always negate worker attempts to gain some control over the pace and intensity of their work (Ram 1993)

A further link between product market and labour process concerns managerial willingness to introduce various forms of employee involvement. Marchington argues that strongly competitive markets are likely to operate against the introduction of employee involvement initiatives 'because managers become obsessed with satisfying market needs, to the detriment of employee interests and issues' (1992:171). Even when employee involvement schemes are in place they can be jettisoned under commercial pressures. Marchington and Parker (1990) document an instance at a supermarket where daily team briefings were abandoned in the context of pressure to meet customer demands.

It is important however to resist the notion that product market competition inevitably induces changes that disempower employees or work solely against their interests. In Kelly's (1985) study of an electrical appliance company, product market competition necessitated a move to small batch production and a re-organisation of the labour process, away from the flow-line established for mass production to fewer workstations each assembling a larger proportion of the product. The result of this reorganisation was a rise in productivity and greater worker motivation through increased interest in their jobs.

Commercial networks also refer to the manner in which firms adjust their HRM practices, as well as work organisation, as a consequence of evolving buyer-supplier relations. Recent developments in buyer-supplier relations away from 'spot' contracting towards greater communication and longer-term commitment has meant that:

> Subcontracting has increasingly become a method by which social relations such as defined by work discipline, quality and training standards are transmitted between buyers and suppliers (Rutherford et al.1995:3)

This is particularly so in industries such as motor vehicles where the final assemblers have undergone a transformation in their organisation of production, and have the market power to expect their first-tier suppliers to respond to these changes (Deyo 1996). Consequently, some first-tier suppliers in this sector have changed or developed their policies relating to recruitment, training, internal labour markets and employee involvement (IRS 1995; Rutherford et al. 1995; Turnbull 1993). There is also some evidence to suggest that first-tier suppliers in industries other than motor vehicles are amending their HRM practices in response to market pressure of their customers (Kinnie et al. 1998).

In summary, this section has identified, discussed and justified four network structures which are applicable to an analysis of workplace relations. Three broad conclusions can be drawn. First, although the term networks is little used in studies of workplace relations, the concept is strongly representative in the literature. Second, these networks have a powerful influence on the labour process and third, the actual influence of networks is not unidirectional, but is contingent upon factors both external to and within specific organisations.

These networks should not necessarily be seen as operating in isolation, rather they interact, either in a way which promotes mutually

reinforcing effects or in a manner that involves contrary effects. One example of this interaction is provided by Danford's (1998a) study of CarPress, where, in order to respond to the Just-in-time demands of customers (commercial networks), the company restructured team-working arrangements away from autonomous work-teams (workgroup networks), bestowing greater power and pressure on supervisors to reduce the porosity of the working day (supervisory networks).

This raises the question of what factors determine the specific influence of networks. Why, for example, do workgroups support managerial objectives in some instances and yet actively seek to undermine them in others. In order to address this the second element of embeddedness needs to be introduced, that of social relations.

Social relations

As was discussed earlier, the concept of social relations as used here, refers to purposeful action within an ongoing pattern of relationships between network constituents. Social relations and networks can be viewed as having a sustained and potentially interactive relationship, with each having the capacity to shape and be shaped by the other. Social relations is not used here in the specific sense of the distinction between the owners of production and the proletariat within a capitalist mode of production, though it is recognised that the interaction between social relations and networks is developed within a context of capitalist relations of production.

Social relations are important in a study of the workplace because they help to address issues concerning individual and collective activities. They complement networks because they allow a more intimate discussion of the behaviours and motives of workplace actors. In this sense they allow both disparate and similar actions within networks to be 'unpicked' and analysed in more detail. Social relations provide an additional way of 'making sense' of observable behaviour and of understanding why certain patterns of worker action occur in particular situations.

Three categories of social relations can be identified within the workplace. Clearly, all actors approach social interaction in the workplace with some expectations (however ill-defined) and will evaluate exchanges and develop or eschew relationships on the basis of the extent to which these expectations are met. This can be termed 'reciprocity'. Also actors bring with them certain information, relating to, for example, technical data, occupational skill, facts or heresy on the partner in the interaction; this can be termed 'knowledge'. Finally, actors bring themselves, their values, self-image and prejudices; this can be termed 'identity'. This section now moves on to discuss and justify these three categories of social relations with reference to existing workplace studies.

Knowledge

'Knowledge' is used here to indicate the ways in which information and learning are used in shaping workplace relations. Knowledge of production processes can be appropriated, guarded or shared. One long-standing line of

approach stresses the actions and ability of management to appropriate worker knowledge at the point of production in order to gain control over the labour process. Taylor's 'Scientific Management' was formulated around the codification and standardisation of work practices in order to combat the 'systematic soldiering' which was a consequence of the lack of knowledge held by management of the details of the production process (Miller and Form 1980). For Taylor the result of Scientific Management would be industrial harmony, with the ensuing increase of productivity raising both profits and wages.

Braverman (1974) also saw the appropriation of worker knowledge as a key objective of management, but his analysis is rooted in the exploitation of labour by capital. He argues that the continuous search by capital for surplus value, manufactured at the point of production, led management to deskill workers through a combination of Scientific Management and technology. These two related themes, the subdivision of tasks in minute detail and the use of technology to appropriate the knowledge and skills formerly held by workers, constitute an enduring thread in the industrial relations literature across a range of industries (Gabriel 1988; Lupton 1963; O'Connell Davidson 1994). It does however need to be noted that their efficacy in promoting managerial control is disputed (Edwards 1979; Wilkinson 1982).

An alternative perspective on knowledge is that it can guard as a defence for workers against work intensification or unfair treatment. Collinson (1994) identifies two different examples in contrasting work environments. In one case, an engineering works, workers kept the knowledge and skills they

had gained over operating procedures to themselves and used this knowledge to buy time, for example, by 'kidding' the rate fixer. In the second case study, a female worker in an insurance company engages in what Collinson describes as 'resistance through persistence', based on extracting information from management. The case highlights the actions of a pregnant female insurance worker who saw two colleagues promoted instead of her, despite being the best qualified candidate and being told at a previous board that she was next in line for promotion. The clerk fought this decision with the help of the union officer, using knowledge of company procedures to force the company to try and justify their decision

A third theme prevalent in current literature is that of sharing of knowledge. It is argued that in order to survive in a competitive environment, companies need to encourage and promote workers' ability to use their knowledge and tacit skills. It is a perspective that views the enhancement of worker skills as being of benefit to both employees and managers. Although this has the same principle as those associated with Scientific Management, that of mutual gain, it is usually based on enhancing the task discretion of workers rather than rigidly constraining their actions. This approach is central to a number of influential texts. Poire and Sable's (1984) flexible specialisation thesis has as one of its central planks the renaissance of an artisanal culture and the revival of craft working, allowing companies to compete in niche markets. For Peters and Waterman (Peters and Waterman 1982) 'excellent' companies are ones that allow their employees considerable degrees of autonomy. In Atkinson and Meager's model of the 'flexible firm'

(1986), the core workforce is a key to an organisation's success, as they are characterised as being multi-skilled and willing to update through continuous training. This literature, amongst others, has led to the recent growth of initiatives such as autonomous team working, noted earlier. However, it is important to recognise that these strategies of 'empowerment' and 'responsible autonomy' have been viewed more critically as means of work intensification (Nichols and Beynon1977) and increased managerial control (Friedman 1977).

Finally, workplace relations are also linked to absence of knowledge as well as its possession, in that perceptions of (in)competence can influence the interaction within different networks. For example, managers' lack of confidence in the competence of supervisors can reduce the degree of authority that is delegated down the supervisory hierarchy (Lowe 1993). Similarly, worker perceptions of the competence of managers and supervisors may also constitute an important issue. Harris' (1987) study of a chemical plant shows that if workers were given orders by superiors whom they felt to be incompetent, then they were more likely to bend these instructions or act in non-compliant ways. Additionally, workers were actively hostile to incompetent managers and would try to get them removed.

Identity

'Identity' is used here to indicate ways in which personal and group identities impact on shop-floor relations. For some commentators this issue of identity has been accorded a pre-eminent position within workplace analysis

to the exclusion of more traditional interpretations. Casey (1995), for example, argues that identity, through its function in creating an image of 'self', is the most important determinant in structuring workplace relations. One consequence of the primacy of identity within the 'new' workplace is, according to Casey, the greatly reduced relevance of labour process analysis. She comments that:

> Post-industrial interregnum, post-industrial technologies have brought about the end of the labour process as it is traditionally understood..the old discourses of industrial production - typically understood as ideologies that include traditional class locations and identifications, traditional relations between capital and labour, management and unions and occupational stratifications-are diminishing in importance in post-industrial conditions (1995:132)

However, Casey's approach seems unsatisfactory for two reasons. First, because the traditional structured antagonism (Edwards 1986) which has characterised workplace relations shows little sign of disappearing (Danford 1998a; Scott 1994). Second, because it appears based on a reading of the labour process literature that has not moved on since the work of Braverman.

That is not to deny the significance of identity. The reference-points that people use, either as individuals or groups, can shape workplace behaviour. One category in framing identity is gender. It is beyond the scope of this study to survey the plethora of literature on the influence of gender on the labour process. For the purpose of this section, two specific examples will be outlined to establish the link between gender, identity and workplace

relations. Collinson (1992), in a study of Slav Engineering works, argues that the way men view their employment and interact with each other and with authority figures is underscored by their investment in the culture of masculinity, Masculinity does not conform to a homogeneous category, but has alternative meanings for different workers. For Harry, a character in Collinson's study, masculinity embodies the supremacy of practical, manual, craft work over other forms of employment. Collinson observes:

> Embedded in Harry's elevation of 'the practical' is a deep-seated emphasis on masculinity that contrasts with the 'effeminate' feminised work of white collar employees and managers and the domestic labour of wives (1992;91).

Alternatively, for Dave, masculinity is embedded in his role as breadwinner. This leads him to reject promotion because he sees that it would both disrupt his domestic stability and increase his job instability, as he would no longer have access to trade union protection, therefore threatening his role as 'provider' for his family.

Additionally, identity and workplace relations can also be shaped by women's attitudes towards 'femininity'. Gottfried's (1994) study of temporary clerical workers describes a situation where female workers would impose their identity by engaging in acts of 'everyday' resistance, such as rejecting 'feminine' behaviours expected of them, by, for example, challenging 'acceptable' dress codes. In a similar vein, Westwood (1984), in a study of female workers in the clothing industry, argues that their identity, both as

female workers and (potential) brides/wives, forms the basis of their relationships with colleagues and with management.

Identity is important not only in influencing workplace behaviour and attitudes, but also in the way that work activities bestow meaning on individuals. Identity can both be derived from work activities and shape them. To use Super's (1994) term work can form part of an individual's 'self-concept'. An example of this occurred with the introduction of a computer system into a privatised public utility (O'Connell Davidson 1994). One reason why the clerical staff resisted (albeit unsuccessfully) the introduction of this system was that their personal identity at work was constructed around their view that they should provide a helpful service to customers, a function which the new computerised system denied them. Similarly, Sosteric's (1996) study of 'servers' in a night-club illustrates how their identity, both as individuals and a group, was constructed through the development of personal styles in their relationships with customers. Management attempts to force them to behave differently towards clients led to resistance amongst the staff.

Not only is identity important in shaping the views and actions of workers, it also applies to other groups of staff such as supervisors. For example, supervisors' identity can be shaped by their perceptions as to whether they are part of the managerial or shop-floor culture (Armstrong 1983). Similarly, as Nichols and Beynon (1977) illustrate, supervisors' identities and behaviour can reflect their attachment to the traditional craft skill of the foreman or, alternatively, to the planning and administrative world of computers and data. Whatever identities are embraced by the supervisor,

they can have significant consequences for the ways in which they interacted with workers and managers.

Reciprocity

'Reciprocity' characterises relationships between and within organisations. With reference to relationships between organisations, Grabher comments that inter-firm networks 'entail indefinite, sequential transactions within the context of a general pattern of reciprocity' (1993:8). He argues that obligations under reciprocity are often implicit rather than explicit, and reciprocity is not supposed to reach a balance in every exchange 'but rather over the entire exchange relation' (ibid: 8). It is this concept of implicit, long-term reciprocity that is one of the underpinning features of strategic alliances, which have been the subject of much recent academic and business interest (Faulkner 1994).

Reciprocity is also a feature of intra-firm network relations. This intra-firm reciprocity can act as a way of facilitating output and of averting overt conflict. Consider, for example, the 'culture of politeness' which characterised worker-management relations at the biscuit factory studied by Scott (1994). Management would couch requests in the language of 'favours'; in return, workers would receive perks, such as financial bonuses for operating an extra machine. This was an informal accommodation which senior managers supported because, on balance, they believed it could secure a high degree of co-operation from workers. However, the informal nature of reciprocity means that it was subject to 'abuse' and renegotiation. When, in the biscuit

factory, workers started bidding up the price of favours, holding out for more bonus time, the reaction of management was to attack slack practices (e.g. clocking on for a friend) which they had previously ignored. This led to a souring of management-worker relations and, consequently, management rescinded some of its 'harsh' decisions. However, the very fact that management had the capacity to act in this way was successful in sending a message to workers not to push this reciprocal arrangement too far. The point this illustrates concerning reciprocity is that it can be withheld and that it is an arrangement that is usually underscored with relative degrees of power.

Reciprocity is also a key feature of many supervisory networks. It was argued earlier that supervisors develop mutually beneficial arrangements with workers to ease the processes of production. Supervisors can also enter into reciprocal agreements with workers for pecuniary rewards, as the in the case of the fiddles used by hotel staff (Mars 1973). Although these fiddles were implemented by the waiting staff, access to them was controlled (or denied) by their supervisor, the headwaiter, who received a share of the 'spoils'. It is also interesting to note that reciprocal arrangements can involve supervisors in collusion with other non-manual grades. For example, Lupton observed:

> At Jay's, the inspector, the progress chaser, the storeman, as well as the foreman and time clerk were all involved in a network of reciprocal obligations' (1963:155).

This theme of reciprocity across several groups of employees has also been illustrated by Roy (1954). In one of the few workplace studies to refer extensively to networks, he details how workers, supervisors and service

departments conspired in 'a network of intergroup relations' (1954:225) to subvert official rules and procedures. In this instance reciprocal agreements acted to frustrate new managerial initiatives, not least because the employees involved saw them as unworkable.

Not all reciprocal agreements involve supervisors or managers. In some cases reciprocity exists between groups of workers as they seek to pursue their own interests. Pilferage again provides an example of this. Mars contrasts the pilferage in hotels, which relied on the complicity of the supervisor, with pilferage in the docks which was organised between groups of workers:

> In dock work-gangs, a regularly hired body of twenty-six men were found organised together to unload cargo. Some work-tasks facilitated access to cargo, but access alone was insufficient for safe pilferage and had to be buttressed by the support of other workers in the gang. Support was offered from within the gang by checkers, who would falsify paperwork; by fork-lift truck drivers who would stack cargo into barriers so that supervisors could not see illegitimate activity; and by signallers who acted as look-out men whilst carrying on their normal work. The gang foreman, though formally responsible for hiring and firing and the discipline of his men, had no role in this pilferage (1973:262).

This is not to argue that work group reciprocity is only driven by pecuniary interests. Reciprocity within workgroups can be a means of defence

against managerial control. In the case of Phoneco, a British-based, American owned company (McKinlay and Taylor 1996), a cornerstone of management philosophy was the establishment of a monthly peer review procedure where team members rated each other on ten dimensions of individual behaviour and attitude. These peer reviews were intended to increase the team members' motivation to comply with expected behaviour and norms. For Phoneco management, 'the success of peer review was the key to gauging the embeddedness of the team culture' (1996:291). However, a deep mistrust of the peer review system developed amongst workers with the consequence that a reciprocal arrangement developed whereby workers collaborated in tacitly trading scores. Worker reciprocity in this instance undermined managerial objectives.

Finally, just as reciprocity can be used to sustain the interests of workers within a group, it can also be used as a measure of discipline; reciprocity can be withdrawn from individuals as a form of sanction by the workgroup. In her study of women workers on a production line, Cavendish (1982) notes that the help normally given to each other by members of the work group was not extended to workers who were disliked and/or perceived as lazy.

In summary, this section has devised, described and justified the three categories of social relations in the embeddedness model. In practice, social relations may work independently or in concert. One example illustrating the interaction of the three categories of social relations is the instance of workers in a privatised utility, mentioned earlier. In this case workers attempted to

resist the introduction of a new computerised system by management (O'Connell Davidson 1994). This resistance was grounded on the workers' view that the new system did not allow them to fulfil the role they envisaged for themselves (identity), neither did it recognise the customer expertise they had developed (knowledge). Resistance to management took a number of forms including unofficial collective decisions on 'walk-outs' and not to work beyond contract (reciprocity). This resistance ultimately failed and one of the factors militated against its success was the workers' lack of familiarity with formal trade union procedures (knowledge).

Embeddedness and the labour process

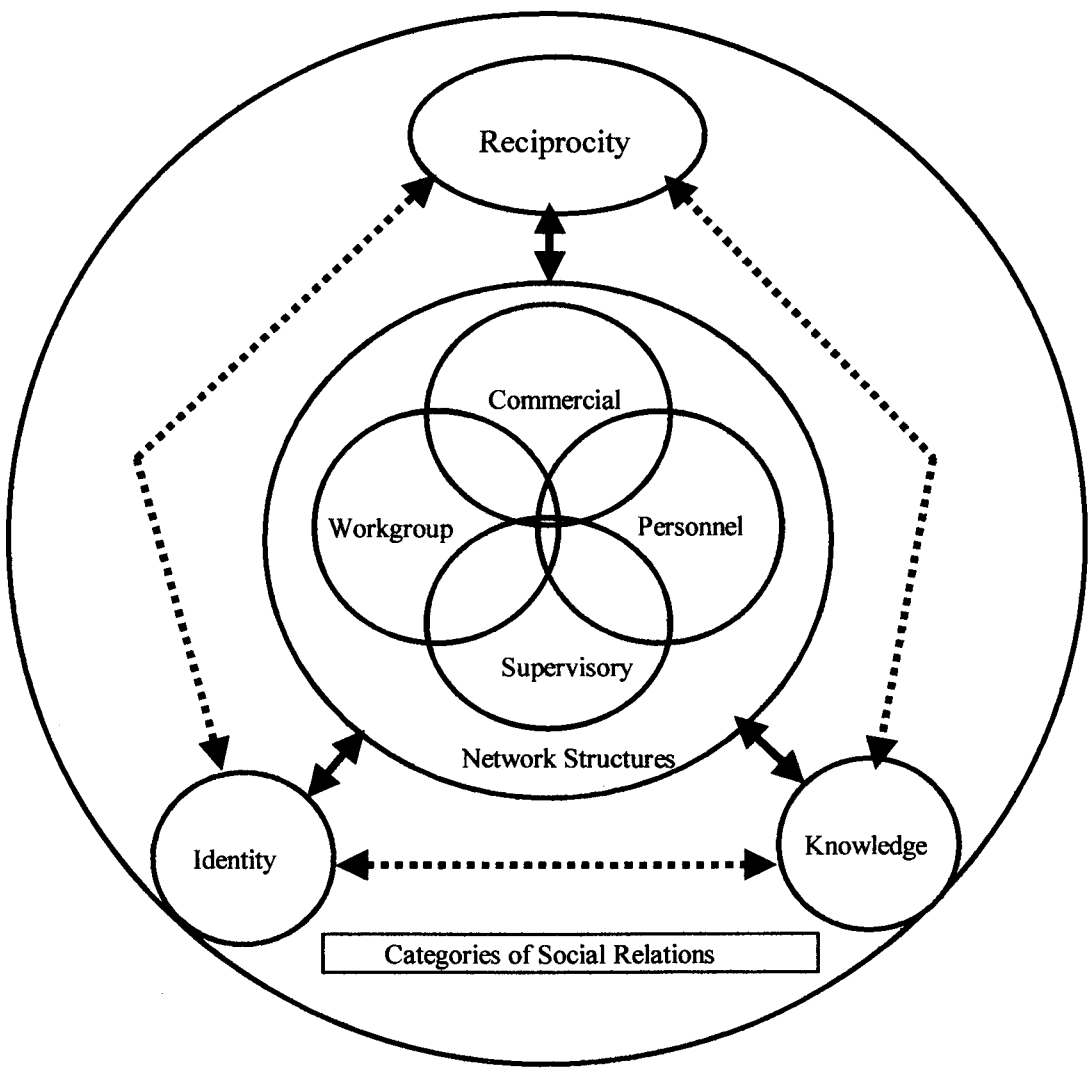
This chapter has outlined the embeddedness framework which forms the analytical basis of this thesis. Four types of network structures have been identified which interact to influence workplace relations. To support this network analysis three categories of social interaction have been formulated. Together these two concepts of networks and social interaction can be used to explore the ways in which workplace behaviour are embedded in both inter-firm and firm-specific structures and also in the consequence of the actions and choices of all constituents.

The embeddedness framework is presented diagrammatically in figure one. The diagram illustrates the interactive nature of the embeddedness analysis. Workplace relations will be influenced by the interplay within and between networks and social relations. Each of the four network structures may have an independent influence on the labour process, or as the

overlapping circles suggest, there may be some supportive or conflictual interaction between the structures which influence workplace relations. The three categories of social relations may also operate in an individual or combined manner, as is indicated by the dotted lines between them. Also, these categories of social relations can, as the firm lines suggest, both

Figure 1

The Embeddedness Framework



influence and be influenced by the network structures. The nature of workplace relations will, of course, vary between organisations depending on the interplay of networks and social relations, but it is this interaction that will shape the labour process.

Finally, having outlined the embeddedness framework which informs this study, it is also important to recognise a factor which has been discussed in the case study materials but has not been allocated a distinct category, namely, technology. This has been omitted as a specific classification in order to avoid an overdeteministic view of the impact of technology (Grint and Woolgar 1997; Wilkinson 1982). In the case of the embeddedness model, the influence of technology will be gauged both within the four network classifications and the three dimensions of social relations.

The embeddedness framework and the Japanisation debate

The aim of this chapter was to develop an analytical framework through which the labour process in Japanese transplants could be explored and explained. It was argued in the summary of the previous chapter, that any satisfactory analysis had to satisfy four requirements. In order both to illustrate the link between the current and previous chapters and to establish the applicability of the embeddedness framework, this section will consider the ways in which this framework fulfils the four stated requirements

The first requirement is the avoidance of oversocialised or undersocialised accounts of workplace behaviour. Granovetter's

embeddedness model was developed specifically to offer an alternative to these perspectives. The embeddedness framework identified above recognises the social structures shaping action, both within and outside the organisation, but also allows for the actions of individuals and groups in shaping their own destiny. This framework allows for the significance of individual actions within an overall structure of networks.

Second, it was argued that any analysis should include factors external to the point of production and also those at the level of the factory floor. The identification of intra-firm and inter-firm networks achieves this by presenting an integrated analysis of external and internal structures which impact on the labour process.

Thirdly, an inclusive analysis needs to embrace the motives and actions of a range of actors. Again the use of a range of network structures is significant here as it allows an analysis of workplace relations to include the actions of operators, supervisors and managers. In addition, the categories of social relations provide an insight into the meanings and motives of individual actors at all levels of the organisation as they seek ways of pursuing their interests within broader structural constraints.

The final requirement of a theoretical analysis is to identify the contingent factors impacting on consent and resistance. The embeddedness model provides a framework which allows workplace relations to be examined both comprehensively and systematically. Whilst suggesting that the nature of workplace relations can be explained by the interplay of network structures and social relations, it does not pre-judge the outcome of research. Taking

this approach allows an analysis of the impact of both individual action and wider social and economic structures upon the labour process, without predetermining their outcomes.

Summary

In summary, this chapter has sought to establish empirically and conceptually the embeddedness model of workplace relations. Using Granovetter's networks and social relations model of embeddedness, an analytical framework of four network structures and three categories of social relations has been devised. It has been argued that this satisfies the criteria established in the previous chapter for an adequate framework with which to analyse the factors shaping the labour process in Japanese manufacturing transplants. The embeddedness framework will form the basis of the case study discussion in subsequent chapters. Before this is attempted a description of the research methodology and the case study company is required; this is presented next.

Chapter Three

Research Methods and Research Site

This thesis is based on an ethnographic study of a single company, which I have called Telco. Telco (a pseudonym) is a Japanese company with a manufacturing base in Britain. It is a first-tier supplier to the automotive industry. The research method involved primarily, a nine week period of participant observation on the factory floor. This was supplemented by: structured interviews with key management informants both before and after the participant observation, two days work-shadowing of supervisors, and structured interviews with staff in two of Telco's suppliers and one of their customers.

The aims of this chapter are to provide a description and justification of the research methodology selected. In addition, methodological critiques of previous studies of Japanese transplants are incorporated where appropriate. The chapter begins with a justification of the research method used. A rationale for case study approach is offered and the use of overt participant observation as the primary research method is justified. After identifying the reasons for selecting Telco as the case site, it discusses some of the methodological issues arising from an ethnographic approach.

Methodological Justification

Any researcher of workplace relations is faced with a considerable array of choices. The purpose of this section is to identify why a single-site study, based on overt participant and supported by interviews and work shadowing was an appropriate choice for this research project. It does this through a process of filtration where a range of alternative methods are considered and either discarded or progressed until an academic justification is produced. This filtration process begins with a discussion of case studies and surveys.

Case study or survey

Research into Japanisation generally and shopfloor relations more specifically has usually taken the form of a survey or of case studies. Surveys, as referred to here, involve gathering data from a large number of sites, often through questionnaires and sometimes supplemented by other methods such as structured interviews. By contrast, case study research uses a variety of tools to produce an in-depth study of a smaller number of sites (Hammersley 1992). Whilst recognising that surveys have a number of benefits such as allowing the researcher to gather large amounts of data quickly, identifying trends, determining correlations and making generalisations, the approach selected here was one of case study analysis. The reason for this is that the case study has a number of advantages over the survey as an approach for understanding and analysing workplace relations.

Case study analysis provides a greater level of detail and accuracy than surveys (Hammersley 1992). With reference to detail, although

the surveys can produce large amounts of data, they may not provide the adequate detail to explore the relative significance of particular policies or events. Peck and Stone make this point in a critique of surveys within the Japanisation literature. They comment:

> We contend that the presence or absence of a particular practice (as indicated perhaps, by a tick in a postal questionnaire) is of less significance than the way in which the practice is applied in the establishment concerned...This is an important point, given that information concerning Japanisation is frequently derived from surveys (for example, IRS Focus, 1988, 1989 Oliver and Wilkinson 1990) To confirm the existence at a plant of a particular practice tells us little about its significance in operational terms (1992: 60).

In-depth case studies provide a method of attaining detail which help the researcher make informed judgments concerning the relative significance of practices. In the context of workplace relations the researcher can explore issues such as, whether policies are applied consistently across the workforce and if they have the same degree of importance to all the constituents in an organisation.

Even when questionnaires are supplemented with interviews, the structured interview approach favoured by the survey method constrains the amount of detail that can be gathered. Structured interviews give respondents less chance to elaborate on questions and also deny the researcher the opportunity to probe inconsistencies or areas of interest that emerge spontaneously. As a consequence, surveys may produce a less nuanced

view of workplace relations and workplace change than the case study (Morris and Wood 1991).

Case studies also offer a potentially more accurate research tool than surveys. Accuracy can refer to the ability to validate factual information. In many instances survey information relies solely on one or two management informants, who, for reasons of self-interest or lack of information, may not provide complete or objective information. Accuracy also refers to the opportunity to distinguish between the existence of a policy and its outcomes. In this sense, case studies are able to explore the social and potentially contested nature of workplace relations in a way which surveys cannot. This point is particularly important in relation to the Japanisation debate because, as indicated in chapter one, accounts which have posited the demise of worker resistance can sometimes be premised on the failure to distinguish between managerial intentions and policy outcomes.

In some instances the advantages of case studies over surveys have been recognised by the researchers themselves. For example Abo et al. who utilize surveys as a major research tool, comment that a case study where 'a researcher conducts observations at a single plant over a period of time and then individually, gathers checks and confirms all the data...is recognised as the ideal type of plant observation and ...has produced a number of seminal studies' (1993:23).

In sum, the case study method has a number of advantages over the survey which are related to detail and accuracy in analysing social relations. Given that the aim of this dissertation is to report and analyse workplace

relations, the use of the case study method does seem more appropriate than the survey technique. This section now considers the issue of single or multi-site case studies.

Single or multi-site case-studies

Multi-site studies refer here to the in-depth case study analysis of a few sites. Multi-site site case study research has generated some valuable contributions to the Japanisation debate (Delbridge 1998; Elger and Smith 1998; Stephenson 1996)and to an understanding of workplace relations more generally (Edwards and Scullion 1982; Lupton 1963). The advantage of multi-site studies is their comparative focus. As Edwards observes 'having learnt that things are done in a certain way, one wants to know how much the process differs elsewhere and why' (1992:393).

Given the potential benefits of a multi-site approach, one of the original options considered when contemplating the research strategy for this thesis was a comparative two-site study. However, during my placement at Telco I took the decision to limit the research to a single site and to investigate aspects of that particular case in more detail. The reason for this was that two issues arose during this period which had a significant impact upon shopfloor relations, issues that I could not adequately research solely from the perspective of a shopfloor worker. These issues were the significance of the role of the supervisor and the importance of buyer-supplier relations. I elected to forego the potential gains of a comparative period of participant observation in order to pursue the outstanding issues arising from the initial intensive

research. I chose the latter option for two reasons. Firstly, a central analytical approach underpinning participant observation is inductive reasoning (Hammersley 1992), with the concepts and ideas arising out of the data. It would therefore seem inappropriate not to pursue key issues as fully as possible, simply because they were not part of the original research design. As May (1997) argues, flexibility is important in research. Secondly, and relatedly, given the finite amount of time available for any research project there is then a potential trade–off between depth of study and number of sites.

What single-site studies do allow is the opportunity to produce 'thick' descriptions (Geertz 1973). In attempting to discover and explain what do people do and why they do it, regular and sustained contact is very important. Thick descriptions may be better at both capturing the range of behaviour and allowing a more sophisticated and contextualised interpretation of the significance of events. For example, something might occur infrequently (or even once), yet be of considerable significance. This in-depth perspective may be lost in multi-site cases where there is no prolonged period of contact.

Is the use of a single-site rather than multiple-site study a significant disadvantage? There are a number of reasons to suggest not. Single-site ethnographies are an accepted tradition both within Japanisation (Graham 1995) and within the study of workplace relations more broadly (Burawoy 1979). Also, a comparative focus need not rely on research by a single author; there is a range of other case study material on Japanese transplants which provides very valuable comparative data. The obvious disadvantage of using studies authored by other researchers is that they may not ask the

same questions and confront the same issues. This is a point taken up later in this chapter when the issue of generalising from ethnographic studies is considered; it is sufficient to say at this point that the breadth of other case study material does make a comparative analysis possible.

Questionnaires, Interviews or Participant Observation.

Research based on case study analysis usually involves one or more of three methodological approaches: questionnaires, interviews and participant observation. The salience of these methods for this study is considered next. The use of questionnaires in case study analysis replicates many of the advantages and disadvantages of the survey method discussed above. Questionnaires can produce a large amount of data both within and across different sections of the workforce, thereby allowing generalisations and comparisons to be made from a representative sample. They can also address a number of purposes ranging from the gathering of factual information to the evaluation of attitudes and opinions. Set against this, questionnaires are able to say little about detailed social interaction and the way in which the dynamics of working life are 'played out' on a day-to-day basis. In the context of the Japanisation debate, the strengths and weaknesses of questionnaires can be illustrated by reference to Grant's early work (1994). Grant used questionnaires as the main research tool to report on the impact of culture-change policies in two British-based Japanese transplants. The data showed that workers held negative views concerning the company and that the programmes had not achieved their objectives,

allowing Grant to explore the reasons for this antagonistic relationship. However, the research tells us little about the outcomes of worker dissatisfaction. We do not know whether this adversarial relationship had any consequences for the management or, indeed, if it was translated into any form of action by the workers. In relation to my thesis, whilst acknowledging the potential benefits of questionnaires, they do not seem to facilitate the aims of this study .

Turing next to interviews, these have provided some valuable insights into workplace relations in Japanese transplants. Smith and Elger (1998) use interviews to paint a vivid picture of the difficulties facing managers in managing a 'green' workforce at Telford, in the context of the plentiful supply of jobs. Similarly, Fucini and Fucini's (1990) study of the conflict at Mazda's Flat Rock plant was based primarily on interviews. There are, however, pitfalls in interviewing as a method of attempting to determine what goes on at the level of the factory floor. There may be a difference between what the interviewee says and what occurs in practice, resulting either from a deliberate attempt to misinform or from lack of accurate detailed knowledge. Delbridge illustrated the shortcomings of interviews as a research method when he conducted interviews after a period of participant observation. Delbridge comments:

> In an interview, Desmond Sweeting (the production director), claimed that improvements discovered at the plant would be fed back to Japan in order that the standard times in the manuals would be updated and improved. In practice, this information is held within the panel shop by

> the team leaders and middle managers in order that they may meet the very demanding targets set. (1998:61)

Delbridge's observations are particularly interesting because Sewell and Wilkinson (1992a) use the same case study company to support their claim of work intensification, stating that shortcuts workers devise are automatically appropriated by management. It would seem that Sewell and Wilkinson take the word of management that surveillance and work-monitoring are carried out in the prescribed fashion whereas, in reality, and unsurprisingly, this does not always seem to the case. That is not to claim that all interviews are unreliable and that observation is necessarily more objective. Observation brings its own issues concerning objectivity (Hammersley 1992), and these will be dealt with later. But, as Delbridge's example illustrates, an advantage of observation over interviews is that observation provides accuracy and detail that interviews cannot guarantee. This is particularly important as it helps to distinguish between managerial intention and policy outcome.

The problem associated with inferring shop-floor behaviour from interview data has been raised by Allen, with reference to Garrahan and Stewart's study of Nissan. Having been denied official access by the company the authors interviewed a number of volunteers, drawing conclusions that Nissan employees were forced into accepting a regime of subordination. Allen comments that:

> Employee compliance/non-compliance is extraordinarily difficult to assess unless systematic observation within the company has been carried out and additionally participation as an employee is undertaken.

> Until these methods are incorporated I am sceptical that Nissan has cracked the old employer problem of turning human beings into robots to the extent that the authors convey (1995:121).

One key advantage of observation is that it allows the actions of workers (and other shopfloor constituents) to be viewed first-hand rather than relaying on accounts of participants or of third-parties. In this way it can provide a more accurate description of workplace relations. Participation can also deepen understanding of the interaction within the workplace . It allows the researcher to develop an awareness of actions in context and to perceive the dynamics of the shopfloor from the view of those working within it. Also, it enables the researcher to discuss and explore the actions and feelings of workers through prolonged informal contact. To paraphrase Roy's (1954) analogy, in order to explore the lower depths of the shopfloor the best way is to put on a diving suit and go and see what it looks like on the bottom.

However, to rely solely on participant observation is an approach which runs the risk of loosing the potential gains of interviews. Interviews are a valuable means of gathering information and opinions from groups of staff that it might not be possible to observe, such as senior managers. They can also provide a valuable normative picture of the organisation. Finally, interviews can be a way of gathering data in an attempt to explain some of the occurrences and actions noted during observation. These points are acknowledged by Graham in her study of Subaru. Commenting on her methodology of observation and company documentation, she states:

> The analysis has many limitations, the greatest of which is that evidence concerning the nature and effectiveness of managerial control strategies are deduced from the position of the worker. There is no way of knowing the management's intentions' (1993:150).

The issue of managerial intentions is a significant one. It would, for example, be incorrect to assume that managers will always seek to quash incidents of rule breaking; there may be times when managers, in the interests of 'effective' control, may elect not to enforce shop-floor regulations strictly (Gouldner 1954), or even collude in bending rules (Burawoy 1979). Interviews with management provide a way, albeit imperfect, of exploring these issues. Given the potential benefits of interviews it was decided to incorporate these into the research methods of this thesis.

In sum, this study incorporated a range of research methods to gather data from a single case site. The main research method used was a nine-week period of participant observation. This allowed a detailed and accurate 'thick' description of the factory floor, provided the occasion to see policies in action and gave the opportunity to gain a deeper understanding of the behaviours and motives of workers. This period of observation was supplemented by interviews. Three senior managers concerned with personnel and production were interviewed prior to the period of observation to acquire current and background information on the company. After the observation period the same managers were re-interviewed and also the senior British manager was interviewed for the first time. These interviews allowed questions and issues that had arisen during the observation to be

explored and provided a management perspective to help contextualise the experience. In addition, subsequent to the placement, interviews were held with three staff from Telco's quality unit: the senior manager responsible for the unit, a customer liaison representative and a member responsible for supplies requisition. The quality control staff offered a valuable insight, from the company's perspective, regarding the issues faced by Telco when dealing with customers and suppliers. To supplement these data interviews were also undertaken with three staff in a company that was a customer of Telco, and with a senior member of staff in two of Telco's suppliers. The interview schedule also included discussions with two supervisors at Telco, followed by two days spent 'work shadowing' one of them. Interviewing and tracking supervisors allowed a perspective, other than that of a shopfloor worker, to be integrated into the study.

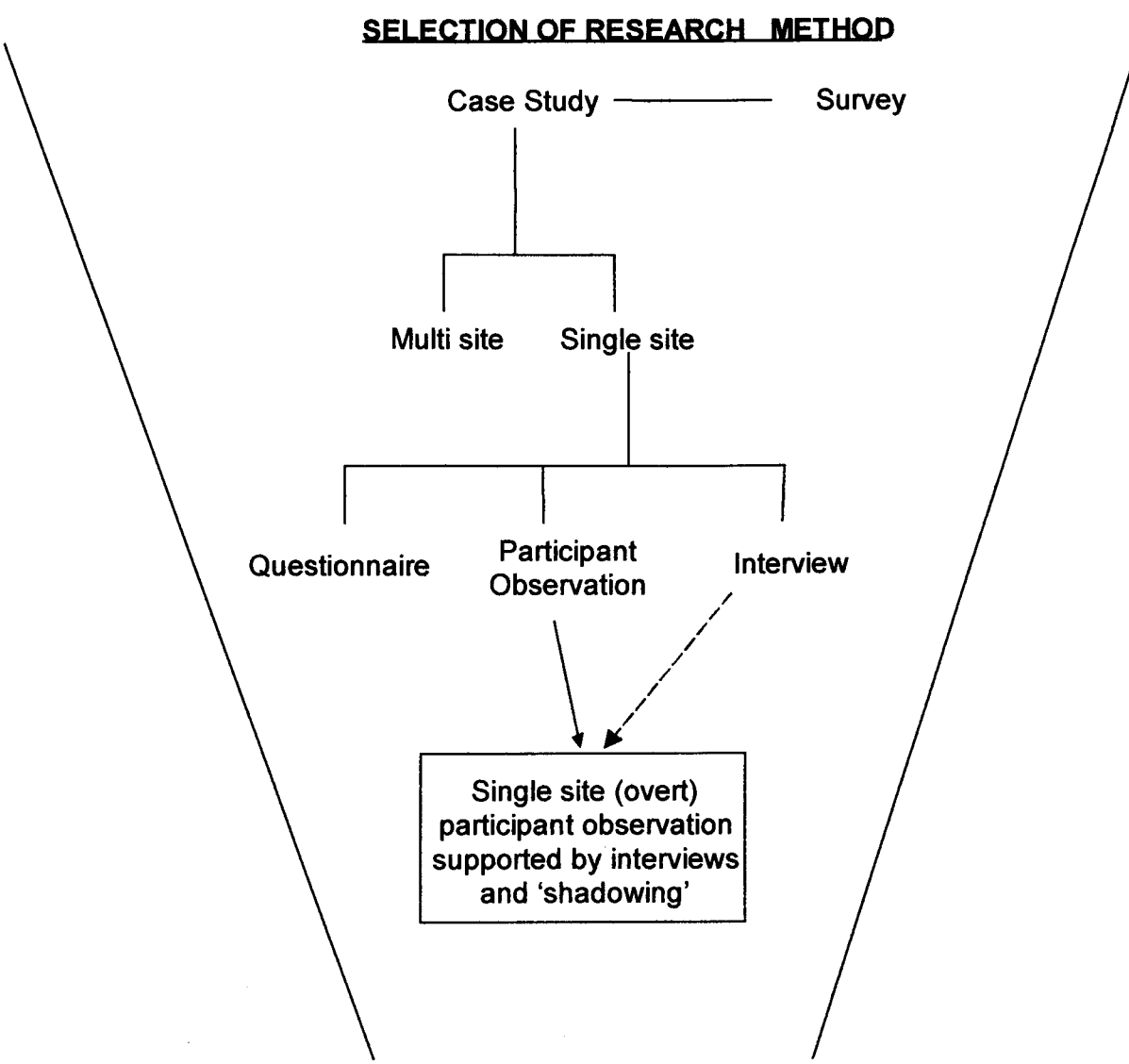
The extended research involving quality control staff, buyers, suppliers and supervisors was undertaken for three reasons. First, participant observation suggested that both buyer-supplier relations and supervisors had a key influence in shaping the shopfloor labour process at Telco. Second, the identification of commercial and supervisory networks as part of the study's analytical framework and the holistic analysis underpinning this study necessitated research on these topics. Third, interviewing key informants allowed the motives and experience of these staff to be explored rather than merely inferred.

The final data source used in this thesis is company documentation. This was gathered in part from the material which I was given as an

'employee', in part from material I was given or allowed access to as an interested scholar during my time on the shopfloor and also from documents that I was offered during or as a consequence of the interviews I conducted.

In summary, the funnel shaped diagram in figure two provides a synopsis of the selections made concerning research methods.

Figure 2



The choice of participant observation (supported by interviews, company documentation and 'shadowing') as a research technique can be seen as the result of a filtration process. This started out with the broad options of case-study or survey before moving through various choices, selecting those that are most appropriate either on methodological or pragmatic grounds. No apologies are made here for pragmatic decisions, most research is based to some extent on what the researcher feels is achievable and within the parameters presented by the possible (Buchanan et al.1988). Having discussed why the research methods chosen were appropriate this chapter now moves on to consider the issues related to undertaking ethnography.

Doing Ethnography

The Case Site

One of the first issues to be faced in ethnographic research is the selection of the case site. The organization chosen in this study is Telco, a subsidiary of a Japanese manufacturing company supplying specialist parts to motor manufacturers. Telco established their British base in 1988, on a green field site in a 'new town' in the West Midlands of England. Telco were attracted to Britain initially to service the needs of Rover which had recently embarked on a joint venture with Honda. Honda were one of Telco's major customers in Japan and, as a consequence of the joint venture, Telco were invited to supply the jointly developed models. Telco's managers said that the company had been invited to Britain because of the quality problems with

Rover's existing British suppliers. This explanation mirrors evidence from America which suggests that the influx of Japanese first-tier suppliers was also linked to the failure of indigenous companies to meet the quality standards of Japanese vehicle transplants (Kumon 1994).

Why was Telco chosen as a case site? There were a number of practical reasons for this. It was in daily travelling distance of my home, thus affording easy access. Also, I had some previous dealings with the company. I had taken groups of students there as part of their undergraduate studies and also had interviewed managers in the company as part of my MA dissertation three years earlier. On these occasions the company had seemed open and receptive to external scrutiny, and I had established a rapport with the personnel officer who subsequently proved to be a 'gatekeeper' in sanctioning my time on the line. The choice of company was taken therefore, at least in part, on grounds of pragmatism and opportunism, grounds which are often the 'drivers' of many academic studies (Buchanan et al.1988).

There were also reasons other than pragmatic ones for selecting Telco. It is a Japanese transplant, and as has been discussed earlier there has been extensive debate concerning the nature of the labour process in Japanese transplants. The choice of a company within the motor manufacturing sector is significant as the vehicle industry has been at the forefront of changes in work organization and buyer-supplier relations (Deyo 1996). As a case site, Telco also offers a contrasting perspective to much of the Japanisation literature. It is a medium sized plant which is in contrast to most studies of Japanese transplants in the vehicle industry. Also, it is not located within a dense cluster

of transplants, such as those found in several 'new towns' and in parts of South Wales. This is significant because such clusters appear to involve relations between managements and local labour market effects of a rather particular kind, as shown in the Telford case. (Elger and Smith 1998).

A further reason for selecting Telco is that it offers a chance to study a company in a position in the supply chain which has been largely ignored by studies of Japanese transplants, but which is of importance. Most transplant studies have focused their attention on final assembly plants, with the first-tier supplier attracting little research attention. A trawl of the literature found only three case studies of Japanese-owned first-tier supplier companies in Britain and America. One of these case studies, (Kerrin 1998) is a journal article presenting a mainly descriptive report of workplace relations within a production system that embraces an internal customer ethos. The remaining two studies offer valuable accounts which detail how company relationships with major customers can either facilitate work intensification (Danford 1998b) or allow workers to extract concessions from management (Stephenson 1996). However, the detail in both these studies is limited as the accounts comprise, at most, half chapters in an edited book. What both of these studies do indicate is that a company's position as a first tier supplier can have an important impact on the labour process. There is also recent research evidence from non-Japanese first-tier supplier companies which suggests that buyer-supplier relations have an significant influence on workplace relations. The precise nature of this influence varies, leading to an intensification of work effort in some cases (Danford 1998a) and the development of worker

capacity to engage in fiddles in other instances (Delbridge 1998). In sum, Telco provides the opportunity to investigate workplace relations in a Japanese transplant operating within a key manufacturing sector and from a position in the supply chain which is significant, but which is under-researched.

Overt or covert participation

Overt participation was chosen for this thesis, although in some ways the use of the word choice is misleading as the decision was made on pragmatic grounds. Given the part-time mode of study, it would have proved very difficult to organise the application for and undertaking of a 'real' job which coincided with other work commitments. Also, given that I had already developed contacts with the company, covert participation would not have been possible. I could have looked for a period of covert participation in another company, but did not want to lose the benefits of size, sector and location in the supply chain that Telco offered.

The problems raised with overt participation are connected with the potential behaviour modification of the group under observation (Punch 1993). The group members may behave differently when the participant is around, and the participant may be treated differently by the group but be unaware of this occurring. The issue of differential treatment is one that arose on at least one occasion during my placement. One afternoon my line attended a scheduled training session. It was a very hot day, the training room had plate glass windows, the session was held during the end of the day, and I kept

'dozing off' for a few seconds. The next day this was a source of great hilarity and I was ribbed about not being able to stand the pace of a real 'working day'. It was also pointed out to me that had I been a 'normal' member of staff I would have been reprimanded for such behaviour. There were, therefore, times when my artificial position was apparent and possibly affected peoples' behaviour towards me. It does, however, seem unlikely that my workmates could have modified their behaviour in my presence all of the time even had they wanted to, as I was with them daily for nine weeks and throughout this period they had the pressure of performing their everyday tasks.

A related issue concerning overt participation is whether an 'outsider' fits in and becomes accepted (Punch 1993). It is difficult to assess this but my own informal indications are that I was accepted as a member of the work team. I performed similar tasks to other operators, joined in the banter and was not spared any group admonishments. One example that suggests that I was generally accepted was my 'leaving present'. This was a framed scroll 'celebrating' my time on the line and detailing some of my more memorable experiences (and clangers). This was written by the women with whom I shared my lunchtimes, calliographed by the husband of one of them, and presented to me on my last day. A copy of the scroll and a 'decoding' of the events it refers to is presented in appendix one. While this is not proof of my acceptance by my co-workers it does suggest some strength of relationship had developed.

As well as potential pitfalls, overt participation can also bring advantages over covert involvement. In particular, it is easier to ask questions

and request information. Supervisors and production staff, knowing that I was there to find out about Japanisation became accustomed to me asking questions, and would point out incidents that they thought might interested me. They would also tell me their experiences at Telco and volunteer their views of the company generally. I was also given access to data that an operator would not normally gain. For example, after being on one line for a couple of weeks I asked the supervisor about production data. He showed me the data produced and allowed me to photocopy them. He also sent me to the production office with a request that they copy data from the other lines, which they duly did. Had I been a covert participant these sources may not have been available to me.

Negotiating Access

My previous contact with the company made negotiating access fairly unproblematic. After writing to request access I had several meetings with the personnel officer to outline the project and to discuss any specific queries from either side. In addition I undertook (and passed) a manual dexterity test, to establish that I had the requisite 'trainability' skills. Prior to taking the test it was stated that my placement did not depend upon my reaching an acceptable level. It is however interesting to note that in a discussion after the placement I was informed by the personnel officer that I had performed competently as an operator (honest), and that if I had been no good "then the production manager would have had you off the line straight away"

Prior to starting the placement, I met the production manager when he attended one of my meetings with the personnel officer. I was half an hour late for that particular discussion, due to a misunderstanding as to the time of the meeting. When I arrived the production manager told me, in no uncertain terms, that punctuality was expected and that if I were to come and work for him that no excuses and no exceptions would be made. This direct approach was, as I found later, a key feature of the way in which that manager ran the factory floor. This serves as an interesting example of the manner in which negotiating access can be more than merely a methodological 'problem', but can, as May (1997) argues, provide some initial clues to understanding social relations.

Recording the data

With reference to recording data there are two areas of concern, accuracy and scope. To consider accuracy first, in common with most ethnographers I recorded data in the form of daily experiences which I noted every evening on returning from work. This approach is not an ideal one, as preferably 'where possible a record is made of observation *on the spot, during the event*' (Robson 1993:203 original emphasis). I tried this on one occasion, taking a pen and notebook into work. When I started to record the first 'incident' of the day, one of my workmates instantly asked me what I was doing. Not wishing to admit that I was recording what they might do or say I mumbled some comment and stopped writing. As a result of that experience, I decided to abandon that strategy, and instead to try to keep a mental note of

issues and record these after work. I felt the possible loss of certain verbatim accuracy was an acceptable price to pay if it meant there was less chance of generating suspicion amongst my workmates concerning my motives. An alternative strategy I considered was to return to my car at lunchtimes and record my observations there. I rejected that option because lunchtimes were often a fund of stories and opinions, not just relating to what had happened on 'my' line, but across the factory. Also lunchtimes provided an opportunity to get to know my fellow workers more closely and to integrate into their social circle. With increasing 'intimacy' (Bruyn 1966) comes the opportunity to understand the meanings of actions taken by group members

Turning to the second issue, that of scope of data, I felt it was important to record information from as wide a range of sources as possible. To facilitate this, I detailed what I had seen and heard, incidents that had happened to me and to others where I was present and also examples reported by others but not occurring during my presence. In recording incidents which I had not observed I ran the obvious risk of gathering inaccurate data. However, as most of these conversations occurred in the presence of others, I felt sure that they had not been constructed merely for my benefit, and also could see no plausible reason why operators would recall to their workmates occurrences that were totally fictious. If 'tall tales' were being told, my judgment was that this would be a matter of degree rather than substance. In addition, in order to extend the scope of the data I asked to work on a number of different lines during my time at Telco. This led to my spending three, almost equal, periods of time on different lines, thus

experiencing differing social circumstances (Bruyn 1966), which helped lead to a greater understanding of the activities of the operators.

Reflexivity

The recording of data not only raises issues relating to the process of gathering information, but also concerns over what the researcher decides to record and the interpretation placed on events. Early ethnographic accounts saw these issues as relatively unproblematic with researchers providing a disinterested account of the social situation with which they were involved. This view has been challenged by Hammersley who argues that while ethnography allows researchers to observe actors in their 'natural' environment, the process of research is a 'reflexive' one (Hammersley 1992; Hammersley and Atkinson 1995), in that it is influenced by the values and interests of the researchers. In this sense the data are viewed through a particular lens that filters some events out, accepts others and continually 'tints' the vision of the observer. Thus, it is argued that there are is no single objective description of any one event, rather that:

> There are multiple non-contradictory descriptions of any phenomenon. How we describe an object depends not just on decisions about what we believe to be true, but also on judgments about relevance (Hammersley 1992:28).

Despite these difficulties concerning objectivity, this does not mean that ethnography cannot accurately represent social phenomena. It is impossible

to escape entirely from the social world in order to study it – pure objectivity in this sense is simply not obtainable. The fact that researchers bring with them their own 'histories' does not invalidate, per se, the descriptions which they produce. Similarly, in the case of participant observation, the active role of the researcher cannot be ignored or written out of accounts, rather their actions and feelings can form an important element in the subsequent analysis.

So, what does reflexivity imply for the practicing ethnographer? One implication is the requirement to keep accurate and extensive data. This I attempted to do and have described in the preceding section. A further implication is the need to consider how the intimate involvement the process of research involves the interpretation of events. I chose, when writing up the thesis, to include my own actions and feelings as well as those of my workmates, recognizing that I was more than 'a fly on the wall' and that my experiences would shape the outcome of the research. Finally, researchers need to be 'open' in relation to any ideological perspectives. In the case of this study, neither my participation nor my subsequent analysis was based upon any specific epistemological standpoints.

Generalising from ethnography

The use of single case studies or a small number of cases raises the issue of generalization. Although the use of ethnography rather than survey research makes generalisation more difficult, generalisation from ethnography is not impossible. The goal of ethnography is not to establish laws of universal applicability that (seemingly) exist in the realm of the natural sciences, rather

it is to establish the extent to which findings in one case (or a few cases) are more broadly applicable.

One key approach is to consider the 'fittingness' (Guba and Lincoln, cited in Schofield, 1993) of case sites. 'Fittingness' involves comparing one case with others of similar detail and description in order to analyse the similarities and differences that occur between the cases. Such an approach relies on the provision of 'thick' descriptions, as is presented in this study. Exactly how this technique of fittingness is applied will depend upon the nature of the major case study site. One approach is to select a site that can be viewed as 'typical'. This study however has rejected this 'typical' site approach and focuses upon an untypical case; untypical, in that there are few published studies of Japanese-owned first tier supplier companies operating in either Britain or America.

How then can a comparative approach of fittingness be applied to an untypical site? It can be achieved by comparing the detail from this study with relevant aspects of a broader sample of cases. Thus, while Telco represents an untypical case, there is an established body of case study literature on Japanese transplants within which the findings of this study can be located. As the discussion in chapter one indicated, data, in the form of other case study material, exist that cite a range of factors as influencing the labour process. These factors include the (mis)application of HRM policies, the existence of intensive surveillance and monitoring systems and the organisation's external commercial relationships, to name but a few. The findings from Telco can be compared with this body of evidence to begin to

generalise about the way in which specific factors affect the nature of the labour process.

Summary

This chapter has detailed and justified the process of selecting a research methodology and also considered the practical concerns around implementing this methodology. Of prime concern has been the need to evaluate competing methodologies in the context of the aims of the study. It has been argued that participant observation supported by interviews and work shadowing was the most appropriate approach to achieve the aims of this study. The research process itself evolved in a way that reflected the emerging significance of different factors. The results of these findings form the basis of the next five chapters. These chapters are organised around the four network structures of personnel, workgroup, supervisory and commercial.

Chapter Four

The Personnel Network at Telco

This chapter focuses on the personnel network at Telco. As argued in chapter two, the term 'personnel network' refers to the cluster of personnel policies operated by an organization and the effects of these policies on workplace relations. The debates concerning personnel policies in Japanese transplants have been discussed in chapter one, and will not be replicated here. It suffices to state that within the technical and social organisation of production associated with Japanisation, personnel policies are often allocated a particular significance as one of the key mechanisms for generating either a committed (Wickens 1987) or compliant (Delbridge and Turnbull 1993) workforce.

The chapter begins by outlining briefly the main characteristics of the labour force at Telco. It then moves on to present and analyse the data on the personnel network under four headings, each representing clusters of policies. These are: single-status, recruitment and attendance control, employee consultation and involvement and training. This does not represent a comprehensive chronicle of all personnel procedures, rather it is a selective account of what, from my discussions and observations, appeared to be those aspects of personnel policies which engaged the interest of workers and managers at Telco. This means that some aspects of personnel policy which

are often a central feature of other workplace studies receive little or no attention here. Payment levels and systems for example figure only briefly.

The data also focus on the policies which did exist, rather than referring to practices which are often associated with Japanese companies, but which were absent at Telco. For example, there is no discussion of appraisals, as they were not a feature of personnel practice at Telco. While it might be interesting and instructive to comment on the non-appearance of policies, this approach does not cohere with the theme of this chapter which is the evaluation and impact of actual practices.

After discussing the four policy clusters, these are then analysed around the three categories of social relations: knowledge, reciprocity and identity. The chapter finishes by discussing amendments made to personnel policies at Telco and relates this process of adjustment to wider debates concerning the transfer of policies by Japanese transplants.

The workforce

In a workforce of 410, the number of shopfloor operators was 225. Approximately 35% of the operators were mature workers (over 30 years of age). This figure represents a significant increase in the percentage of mature workers since the start-up period. The reasons for and consequences of this shift are discussed later in the chapter. Around 70% of operators were female. The high percentage of female workers is consistent with other studies of light assembly work both within Japanese transplants (Danford 1998b; Saso 1990) and in British companies (Cavendish, 1982).

Payment rates for operators were deliberately pitched in the upper quartile in order to attract staff. In the 'new town' where Telco was located there were a large number of factories offering light assembly work. According to the personnel manager Telco had to pay premium rates because:

> Work discipline is much tougher here than in many other local factories. We are hot on attendance and timekeeping and we don't let people eat on the lines. In order to get staff we have got to pay good rates.

The payment of premium rates had not resolved the staffing issues, as labour turnover averaged 25% between 1990-1995. Operators were all paid the same wage (excluding any overtime bonus). They were all expected to be functionally flexible and to undertake any operator-grade task, as directed by management.

There were around 20 Japanese staff at Telco. Most of these were employed in a technical or advisory capacity. Of the twelve senior managers at the company, only two were Japanese. One of these Japanese managers was the managing director, this was a position that had always been held by a Japanese person. The proportion of Japanese staff had been reduced since the start-up period.

Single-status

Single-status is perhaps the most visible and public indictor of both the distinctiveness of 'Japanisation' and also the organisational culture of reducing overt status differentials to enhance commitment to and identification

with common goals. Evidence from surveys suggests that single-status is a practice which has been extensively transferred by transplant companies (Peck and Stone 1993, Morris et al 1993), although, as Peck and Stone argue:

> In some cases, plants have adopted 'full' harmonisation, including pay and grading, working-time, income security, and other conditions such as canteens, uniforms and car parking. In others, single-status extends only to the more superficial (and least expensive to implement) elements (1993:61).

At Telco the harmonisation of terms and conditions of service for all staff includes: common uniform, single canteen, no reserved car parking, standardized working hours, identical sick-pay entitlements.

Within the 'Japanisation' debate the issue of single-status policies has rarely been problematised. The experience of Telco suggests however that single-status can potentially be a source of dispute at all levels of the organisation. One area of tension concerns the policy of no reserved car parking. A company memorandum of November 1994, enigmatically entitled 'miscellaneous items requiring clarification' (see appendix two), states that 'it should be noted that the car park at the front of the building is for use of visitors and for cars to be used on company business only. All employees should therefore park their vehicles in the employee car park situated at the rear of the premises'. This practice was not always followed by senior members of the company, as the personnel manager observed:

> when you come in the morning there shouldn't be any employee cars on the front car park. And yet the MD always parks on the front and so do some of the other managers and one or two of the engineers. We have a single-status rule saying that you don't do that and yet they do it; they're not following the rules.

The implications of this rule-breaking extended beyond the single issue of car parking, as non-adherence to rules by managers supported a climate whereby minor infringements of rules by workers were tolerated. One of the rules which supposedly applied to all staff and which was ignored was the eating of sweets by operators on the line. The 'miscellaneous items' memo also stated that 'food or drink should only be consumed in the canteen.' However it was common for sweets to be passed around the line. This was a practice which, according to the personnel manager, was known and tolerated. He commented:

> We try to be fair and when you've got the MD parking on the front and taking no action, is it fair to go out there and discipline operators because they're having a sweet?

What is not claimed here is some causal link between the abuse of car parking privileges and a specific instance of operator rule-breaking, rather that the non-application of one aspect of single-status works to reinforce a culture where some degree of rule-manipulation by all levels of staff becomes accepted. This led to a situation which the personnel manager summed up as follows:

> It's a bit of a shambles when you've got rules, people know you've got rules and you don't enforce them. It makes a bit of a mockery of things and as I say, we're not enforcing all of these rules.

Single-status also raised tensions concerning timekeeping. The head of engineering argued that engineers should be allowed some leeway over timekeeping because they were professional staff who often worked longer in the evenings and thus should be allowed to come in later the following morning. However the production manager argued that this approach discriminated against shop-floor staff who had to be in on time each morning even if they had worked late the previous evening. A situation had started to emerge where staff were being managed in different ways, some being allowed a limited degree of flexibility over timekeeping, whilst others, the shop-floor workers, continued to be penalised for any breaches of timekeeping. This inconsistency was a concern for the personnel department. The personnel manager commented:

> Either we've got single-status and what we do in the offices is exactly the same as the shop-floor and, if the MD's five minutes late, disciplinary action is taken and he accepts it, he has to accept that. Or, we are going to say, we all have different terms and conditions in different parts of the factory; flexi-time in the offices and rigidity on the shop-floor and we'll manage people differently in accordance with that. If it created divisions and them and us then we have to deal with that.

In an attempt to develop a consistent approach the issue of timekeeping was considered by the personnel strategy group, an ad-hoc body formed to discuss personnel issues, comprising of senior representatives from various departments. However, the contentious nature of the issue and the inter-departmental tension it generated, led, not to the discussion forum providing a solution to the 'problem', but to the 'problem' precipitating the dissolution of the group. The personnel manager again recounts the background:

> Richard, the senior production manager, took offence, personally or professionally or whatever. He didn't want to be sitting in a room with a lot of people who he thought were hypocrites because on the one hand they were saying 'yes we need to cut down on shop-floor absenteeism and make them come to work and deal with them', and on the other hand say 'our guys are different - it doesn't matter if they are late'. He thought that was hypocritical and he wanted nothing to do with it and so he resigned from the personnel strategy group. Because Richard resigned, the group ceased to be representative of all the views in the company and there was no point carrying on - so it stopped.

This interdepartmental tension over timekeeping was, as we will see later, one of a number of sectional conflicts and tensions, some of which had significant implications for the workforce.

An additional single-status issue concerns company uniform. A common uniform still exists, but this has been amended due to worker pressure. Peaked caps were a feature of the original uniforms but these were

apparently disliked by the workers and, under pressure from the company council, the Japanese managers reluctantly agreed to dispense with them. A further compromise 'concession' arose from the request from women workers to wear skirts instead of trousers, an allowance which the Japanese managers were not prepared to make. An agreement was reached by allowing the workers to wear culottes. This diluting of requirements concerning uniform and the reluctant flexibility of Japanese management is a feature of other Japanese transplants (Gleave and Oliver 1990).

Recruitment procedures and attendance control.

The extensive application procedures traditionally associated with Japanese companies (Abegglen and Stalk 1985), and with some transplants (Graham 1995), are not a feature of operator selection at Telco. Aptitude tests are used but these merely assess manual dexterity; there is no personality profiling or attitudinal testing. All applicants are given an interview but this is a brief fifteen minute fact-finding exercise, undertaken solely by a member of the personnel department. The first three months of the contract for all staff are a probationary period. At the end of the three month period a decision is made as to whether to employ the individual on a permanent basis.

Why is such a rudimentary selection procedure used? There are a number of answers to this question. First, the buoyancy in the local employment market means that the available pool of labour is limited. Second, the period of probation acts as a screening device (Morris et al.1993). During the probationary period a very strict line was taken about absence of any kind.

For example, during my period on the line one new starter was summarily dismissed because he rang in sick one day, only to be seen in a local 'hostelry' that lunchtime by one of the managers. A third explanation of the rudimentary selection procedure is that attempts to extend the process would founder on practical problems. The personnel manager explained that he would like a supervisor to take part in the interview, but that this was not possible:

> Really we should have somebody from production in the interview because then they have ownership of that individual. Then, when we put them on the line it's not a case of "what kind of crap have you sent me today?" it's "oh well, this is my person. If they're not working out I better do something about that. I better train them otherwise I'll look stupid because I took them on". If they weren't involved it's so easy when there's a problem to say "you failed - kick them out and get me another one". It's harder to say, "right you've given me this person who isn't very good and now I've got to train them and work with them".
>
> GP: Have you floated this idea at all...?
>
> Yes, yes, again it's time. When we've been recruiting en masse, we'd have needed to have a supervisor or somebody with us all day for a week and they can't spare them. And the counter-argument is, when we recruit we don't know which line they're going onto so you wouldn't, you'd never get complete ownership because you wouldn't have the supervisor who would be supervising them involved in the selection decision. It's not a particularly good argument against it because you would hope that

every supervisor would pick a good person whether it was for them or for their colleagues. Time is the main pressure.

This illustrates a tension between what personnel regarded as 'good' HRM practice and the demands of production. This tension was, as we will see, a theme which characterised the design and implementation of a range of personnel policies at Telco.

Selection procedures at Telco have undergone two significant transformations. First, in line with a significant number of other Japanese transplants in Britain (Elger and Smith 1998; Morris et al. 1993), Telco changed from a policy of recruiting solely young workers for operator posts to one of employing older workers also. One of the British managers responsible for recruitment explained:

> The production manager reporting to me was Japanese and he certainly initially had this idea that he wanted school leavers and rather than just dampen his enthusiasm and say it won't work I decided to go along with this policy and see how it did work. Eventually it turned out that school leavers were not the best people to employ. They didn't have mortgages and at the time didn't need to work. If they didn't want to work they didn't come in and absenteeism was high, there were problems with attitudes. Eventually we moved to a higher age group. A few months ago the average age was 30 years, in the early days it was probably in the mid-twenties. Previously our Japanese management were not keen on people over 30 for production, but now we have people around 45 - 50 who we have taken on and been successful.

This shift in recruitment practices at Telco took a particular direction; all of the mature workers were female. I was the only male on the line over thirty years of age. When I questioned the personnel manager about this gender (in)balance, his response was that he would have been happy to recruit older males onto the factory floor but that they did not apply for these jobs. To justify Telco as an equal opportunities employer he argued that mature men applied for jobs in the mould shop and were employed in that area by the company. During my time on the line the recruitment of new starters followed the established pattern. Younger workers of both sexes joined the lines, but all the mature new starters were female.

While this cadre of older female staff may have been perceived as a stabilising element by management, they certainly were not uncritical or compliant. Indeed by bringing in workers with prior experience, Telco also 'imported' staff who had developed views and expectations of how people should be treated at work, standards which were not always met at Telco. Consequently, amongst my workmates the keenest critics of Telco's management were 'mature' workers who often viewed the regime as unjust. Several examples of these concerns will be discussed later; for now it is interesting to record the comments of Iris, one of my co-workers, when I told her I had school-aged children:

> You tell them to work hard at school and get a good job, so they don't end up in a dump like this and get treated like shit.

A second change in recruitment practice, one which occurred subsequent to my period on the line, was the strategic recruitment of temporary workers. By November 1997 there were 210 permanent and 40 temporary operators employed. This change of policy, according to the personnel department, was a response to commercial decisions. The Japanese parent company had decided to consolidate Telco's business rather than to continue to expand, and so there was no anticipated increase in business to sustain more permanent recruitment. Temporary employees allowed the company to meet fluctuations in demand from existing customers. However, the personnel manager also argued that while the use of temporary workers offered a short-term response to commercial decisions, it was unsatisfactory from an HRM perspective. They were, he commented, 'difficult to get, difficult to keep and not of the right quality'. The difficulties associated with the recruitment and retention of temporary staff have been noted by other studies of Japanese transplants (Elger and Smith 1998; Palmer 1996).

As the above discussion illustrates, recruitment and selection at Telco presented a significant challenge for management. A related 'problem' was that of control of attendance, which is widely identified as a key concern amongst Japanese transplants, as lines often work on 'lean' staffing levels with no 'floaters' to cover absenteeism (Danford 1998b; Sewell and Wilkinson 1992a). At Telco, the issue of attendance control was one that engaged the personnel department to a significant degree, and they sought every opportunity to emphasise the need for consistent attendance. For example, I attended a meeting for my team, led by a member of the personnel

department, to explain the forthcoming introduction of total preventative maintenance (TPM). One issue raised by an operator was that time spent on maintenance might mean that targets were not met. The response from the personnel trainer was that targets may not be met for a range of reasons and that one of the most significant of these was absenteeism. She went on to comment that:

> unless it is a genuine reason for illness, then you are letting the team down. You have got to ask yourself 'could I really have come in?' and if you don't what is the effect going to be.

My diary entry for that evening records my own feeling on the trainer's comments:

> Joanne (the trainer) seemed to go out of her way to get a 'dig' in about attendance. I couldn't see how it was relevant to the topic of the training session. It seemed to me that it was something she was determined to raise at some time during the session to 'make the point'. The tone of the meeting went downhill from that point. TPM needs the support of operators, why introduce a 'telling off'?

Attendance control at Telco was managed in a number of ways by the personnel department. Each member of staff was graded A to C according to the number of absences they had registered during the year. This grade was then used to calculate the amount of company 'sick pay' allowable during authorised sickness. An A-grade employee received 'company sick pay during all sickness absence' but a grade C received 'standard sick pay only'

(see company documentation appendix three). This grading system was an adjustment to the rules as the original policy allowed company sick pay to all absentees. The rules were changed as management felt that this original policy was being abused, with some staff taking 'excessive' sick leave.

The issue of attendance was also a major factor in determining satisfactory completion of the probationary period. For example, one of my fellow operators, Mandy, had her probationary period extended for a further three months because she had a brief period of illness (substantiated with a doctor's note) during her initial probationary period. It was indicated to her that any further absence, for whatever reason, would result in her not being offered permanent employment. A consequence of this hard-line approach on this occasion was that it created for Mandy a sense of grievance and injustice that she was not being treated fairly. She commented to me:

> They (the personnel department) said that I was a good worker but that I would have to complete another three months probation because I had a week off. It wasn't my fault, I had 'flu' and sent in a doctor's note - I don't think it's fair, it's not my fault I was ill.

In contrast to this punitive approach to the control of attendance, one recent innovation to encourage consistent attendance was the introduction of the 'turkey club'. The personnel manager described this innovation:

> we were so busy we said to operators "if you effectively contract yourself to working throughout the whole of December and part of November, six days a week, no time off at all, not even holidays , you'll

> get a bonus". They got that, what we called the 'turkey club'. There's a bonus of about three hundred pounds paid on the last day worked before Christmas.

Interestingly, as with other personnel policies, the 'turkey club' had unwanted and unforeseen consequences. The personnel manager went on to comment that as a result of the 'turkey club':

> a lot of people worked through that and a lot of them got fed up and tired because of the long hours. People were generally getting a bit miserable and they were talking about leaving and we started to get a trickle of leavers and absentees, so turnover has increased and morale has gone down.

The final feature of attendance control concerns the disciplining of operators by the personnel department. Operators who were considered to have unsatisfactory attendance records were 'sent upstairs', that is, summoned to the personnel department to be formally rebuked by a member of the personnel staff. The significance of place associated with discipline is also noted in Delbridge's (1998) study of Nippon where workers were taken to the canteen to be disciplined, and also by studies of British companies using mainly female workers on the assembly line (Cavendish 1982; Edwards and Whitston1993). At Telco, this practice of 'sending operators upstairs' was a major issue for some workers who felt it was applied in an inconsistent fashion, with occasional block purges which caught operators who happened to be absent recently, not necessarily the persistent offenders. This view was

echoed by a number of operators, but perhaps vocalised most stridently by a worker in her 50s who had a range of previous work experience. My diary notes her comments:

> Pat told me that she was 'taken upstairs' recently and told off about her attendance. She was the last of quite a lot of people as personnel had been going through recent records. She said it was the first time in over 30 years at work that she had been told off and that it was unfair because people with a much worse record than her had got away with it. She claimed that she had been ill for one and a half days and also had taken two days off for a bereavement. What's more she had come to work on Good Friday although she was not completely better because she had a week's holiday booked over Easter and she did not want management to think she was skiving. In the five years she had been at Telco, Pat said every previous attendance grading had been a grade A.

While it is impossible to comment on the correctness or otherwise of the action of the personnel department, the key issue is that Pat genuinely felt a sense of grievance and unfairness. It was a story she told every new starter and also if her mates said they felt unwell Pat would always chip in that they better not take time off or they would be 'sent upstairs'. Pat's account became a motif to her and her friends of the unfair and arbitrary treatment meted out by the personnel department.

The issue here is not a challenge to the legitimacy of the personnel staff to discipline errant workers (many operators felt that persistent non-

attendees should be rebuked) but that the process of identifying miscreants was inconsistent, ad hoc and consequently unjust. My diary entry comments:

> Pat and Maureen were having a moan at lunchtime concerning Michelle's absence. They claimed that Michelle often took occasional days off but she had never been 'sent upstairs'. They felt that personnel were slack at following up persistent offenders but just have occasional clampdowns which has the effect of catching anyone who has had time off within the recent time span, hence Pat being sent upstairs. They complained about the unfairness of the system.

Interestingly, support for this interpretation came from Jo, one of the team leaders. She was unhappy with the current situation where team leaders could tell operators off over attendance and punctuality, but had no formal authority to discipline them - a function which was the sole preserve of the personnel department. She commented that:

> Even if you do report things to personnel they take a long time to get round to doing things and then they have block 'purges'. That's no good because they don't always get the worst offenders.

Another feature of attendance control which caused resentment and friction was the issue of 'pass-outs'. 'Pass-outs' were permits given to operators by the personnel department to leave the factory for a short time for personal reasons such as doctor's appointments. This time away from the factory floor was not counted as an absence against the operator's attendance record. The refusal to grant 'pass-outs' again generated a sense of unfairness amongst operators:

> Lorraine told me that she applied to become a bone marrow donor recently. She received a letter to go to the hospital for tests because a potential recipient had been identified. She took the letter to Joanne in personnel who said that she was not interested in Lorraine's reason for wanting a 'pass-out' and that if she went for tests and also became a donor then it would be counted as an absence against her or it would have to be in her own holiday time.

As with the example of Pat being 'taken upstairs', the case of Lorraine and the marrow donation became an emblem of company unfairness. Lorraine recounted this instance to all new starters and also took every opportunity to remind her workmates of the injustice she felt as the following illustrates:

> Talking about dentists at lunchtime today and how most people dreaded dental appointments. Lorraine said that you better not try and ask for a 'pass out', even if you were in pain - they wouldn't give you one - they're not interested in anything but production.

In sum, issues related to recruitment and attendance control proved significant concerns for both managers and workers. For the personnel department a tension arose between 'good' HRM practice and the demands of production. Also, a feature of the personnel policies has been that of adjustment, where initial policies have been reviewed in the light of either 'inappropriate' worker responses, or broader commercial decisions. For employees the main issue has been the consistency of application of policies which has raised concerns about fairness.

Employee consultation and involvement.

The issue of employee involvement has been recognised by Telco's management as a significant area and one which the company needed to develop. During my first series of discussions at Telco a member of the board commented:

> I'm a great believer in team work, in employee involvement. We are discussing with the production manager and supervisors how we can get greater employee involvement. One thing we have done is introduce kaizen, but we need to get quality circles which we don't have at present. We need to get more team and employee involvement in the next year or two.

It is somewhat ironic in the context of the above comments that, by the time I joined the company, the original kaizen scheme had collapsed and was in the process of being relaunched.

At Telco, kaizen was a form of suggestion scheme that was open to individuals and groups of workers. Successful suggestions were rewarded either through small monetary gains or trips to HQ in Japan. While the scheme was aimed at promoting employee involvement, the view from the factory floor was that the way it was managed alienated rather than motivated workers. The following diary extracts report some of the views of the operators concerning the original kaizen scheme:

Anne: one reason the scheme failed was that if you were filling in a kaizen form during work time and this held up the line you were told off. So, you thought 'bugger that' and gave up.

Darren: we broke into a kaizen box last year (the boxes to receive kaizen suggestion forms were placed throughout the factory) and found suggestions in there that were more than a year old - the box hadn't been opened for more than a year. What's the point if they're not even going to look at them?

Iris: I only ever put in one suggestion. I spent a lot of time making a suggestion and drawing a diagram, but I heard nothing. Later on I found out that the idea had been implemented - I got nothing for it.

Jo (team leader): Management interest in kaizen stopped when Mr. Iwasaki (the instigator of the kaizen) went back to Japan. Since then suggestions have not been collected or acted on so people don't bother now.

One common thread running through all of these comments is that, from the operator's point of view, management were not committed to the scheme. However, while Jo observed that the demise of the scheme could be linked to transfer of its champion, suggesting a lack of broader institutional support for kaizen, the scheme was re-launched at the initiative of the personnel department.

The re-launch occurred during my period on the line; kaizen was 'born again' under the legend ESP - employee suggestion programme (a competition was held to find a new name for the scheme, with ESP the

winner). The 'new' scheme was introduced to each line as part of a training meeting (see appendix four for associated paperwork). My diary notes record the cynicism with which some of the line responded to the trainer's invitations to discuss ESP at the re-launch meeting:

> Darren: does this mean you are going to open some of the boxes?
>
> Pat: I'm still waiting to get feedback on an idea from kaizen.
>
> Iris: I put in a suggestion, never heard anything, and it was taken up later - I never got anything for it.

Damien, the trainer, acknowledged that difficulties existed with the previous scheme, but argued that ESP represented a new initiative which had the complete backing of management. Speaking to my colleagues afterwards, it was evident that their cynicism had not been dispelled by Damien's assurances:

> Darren: Anyway it won't come to anything - like all the schemes. When there is a panic on to get stuff out of the door they say we'll do that later - but they never do.

Darren's view of the longevity of ESP proved prophetic. Within twelve months it had collapsed.

This process of introduction, cancellation and reinstatement which characterised kaizen also applied to the company council at Telco. The company council, which was introduced when Telco was initially established, had, by 1995, been disbanded. When I asked during my induction period why the council had been disbanded, I was told that it was the decision of the senior personnel manager who thought that it was a waste of time in its

current form because the worker representatives just used to moan about the state of the toilets or other minor issues. It was stressed that the council had not necessarily been abandoned permanently, and that it might be reinstated in a different format, becoming more focused on issues of significance to the company (it was subsequently reinstated and then finally abandoned)

The senior personnel manager's evaluation of the value of the company council was not shared however by all my co-workers on the factory floor, some of who had a much more positive reflective account. It was felt by a number of operators that the company council had achieved some benefits for the workers, with the change in uniform being the most cited, but not sole, example. There were also contrary opinions, with a few workers claiming not to have heard of the council or stating that it did not represent their opinions, a view consistent with Broad's (1994a) study of the company council at Deniko. But, on balance, amongst my workmates at Telco, these negative responses were in the minority. A much more frequent observation was that the workforce now lacked a forum for discussing genuine grievances. Interestingly, following a discussion with a workmate about the company council, she subsequently produced a cutting from the local press celebrating the opening of the factory. With no little irony, she guided me to a paragraph which cited the establishment of the company council as a feature of Telco's commitment to heeding the voice of its workers.

Employees' opinions on the reasons for the dissolution of the company council were also at odds with those of the head of personnel. One view was

that it was the pressures of production which led to its demise. A former council member commented:

> When we first started they used to let you have the meetings in work time, but they stopped that because they didn't want to take the operators off the line. They started to hold meetings after work - you were paid overtime. After that no more meetings were called. I don't know if people didn't want to stay over or whether the management didn't want to pay the overtime.

An alternative explanation for the demise of the council was offered by three operators on separate occasions. Each expressed the view that it was a request for union recognition which was raised by the council representatives, and rejected by management, that resulted in the termination of the company council. Telco remains a non-unionised company.

This section began with reference to a comment from one of Telco's board members on the need to increase communication with the workforce and the possibility of introducing quality circles. Not only has the latter not been achieved, but also systems for employee involvement and communication had been allowed to atrophy. Although there was no consistent view concerning the value of these institutions, there was a sense amongst the shop-floor workers that management had little commitment to employee involvement. Management were viewed as being more concerned with other issues, in particular the day-to-day demands of production, and as having scant interest in the opinions and concerns of the workforce.

Training

Training at Telco was a mixture of on-the-job training supervised by the team leader or chargehand, and off-the-job training led by the personnel department. There were also plans to introduce work-based NVQ training for operators. At the first of two in-house training sessions I attended, I was presented with a personal development plan detailing the training I would receive over the forthcoming twelve months (see appendix five). It was a cause of some hilarity amongst my co-workers that, when comparing personal development plans after the session, we discovered that they were exactly the same, the sole 'personal' element being that each operator had their name typed at the top of their particular sheet.

Every shop-floor operator was officially designated a trainee until they had successfully completed their probationary period. As a trainee you were supposed to wear a trainee badge, appropriately positioned, on your company workwear at all times (see appendix six for company statement regarding positioning and purpose of badge). New starters generally wore the badge for the first week or two and then discarded it. The emblem or status of 'trainee' seemed to be accorded little significance either by workers or management.

As a new starter, my on-the-job training consisted primarily of a mixture of being shown how to do the task by the chargehand and 'sitting with Nellie'. Once I had indicated that I had grasped the principles of the particular task then it was a case of 'get on with it' and 'you will pick up speed as you gain experience'. Sylvia, a chargehand, described the training in the following way:

> You put them at a machine and you show them the job, watch them a couple of times and that's it.

If I got into difficulty with an operation, I would call the supervisor or chargehand over, or ask my co-worker at the next work-station for assistance. The limitation of this method of training was recognised by workers:

> Cath (an operator): Basically they stick you on a job and leave you to get on with it. You just learn the best you can.

When the team leader considered an operator was competent at a particular task they would enter a tick on the line-training matrix. It came as something of a surprise to me the first time I discovered a tick against my name on the training matrix, as I had not been informed that I had been 'passed' as 'competent'.

The issue of operator involvement in the training of new staff was one which generated some lateral conflict between operators, as my diary records:

> Talking to Sue and Iris today about training new starters. They said some operators don't like to train new operators because it means they have to go more slowly and so they can't keep up with production. This can cause aggravation sometimes. The problem, according to Sue and Iris, is that targets are not reduced when you are training someone, you still have to keep up.

I had some personal experience of the tension that this could cause, as the following diary extract indicates:

> Sent to work with Mandy at the beginning of the day. Her task is one of the most complex on the line, involving assembling a number of

components manually then placing them on a jig and compressing them to fix them into position. She is incredibly quick and dexterous at this. When she was told by Jo (the team leader) that she would be training me she complained that it was a demanding job that didn't have any spare time for training. Jo's response was to give it a go and see how I got on. Mandy suggested that she should continue the more complex manual assembly while I worked the compressor. She did warn me of the need to set the unit in the jig accurately and that failure to do so would mean holes were drilled in the fascia rendering the unit unusable. After half an hour of trying to match Mandy's pace I was responsible for six ruined units. Mandy went to Jo and had me taken off the job.

The above accounts illustrate the tensions between training and the demands of production. These tensions are further exemplified with reference to the in-house training programme provided by personnel. An annual training plan was submitted by the personnel department to the board of directors, accompanied with a bid for training time to meet this. Once the bid was accepted, each line would have specific half-days allocated to them when they were taken off production to attend the training sessions. It is interesting to note that the two training sessions which I attended had been scheduled on three previous occasions, but had been cancelled because of urgent production demands. The personal development plan I was given also indicates how far training had fallen behind schedule. Of the six 'development

needs' with specifically allocated training times, four had been extended beyond their original dates. A member of the personnel staff discussed the difficulties in planning and delivering training at Telco:

> Training came to a standstill in the end because we couldn't release people off the lines which is a great shame.....Sometimes when I talk to people like Richard (the senior production manager) he convinces me that he really understands why training's important. There are many, many occasions when we're talking about all the problems in the company, when they make it obvious that they know that the fact that the operators aren't fully trained is a problem and is holding them back. So on those occasions they know it's a problem and they know training is important and has to be done but there is this conflict because at the end of the day what they're measured on is output and it's today's output. And if today's figures are down, they get taken to the M.D.'s office and they get a bollocking.....When we do training we know we will get a payback but it might be in six months, might be in a year, it's a gradual process. If that means they've got to suffer now for a payback in six months or a year they're not going to be interested. So yeah, they understand the importance of it, but the pressures that they're under mean that they have to put their targets first.... so there is a conflict. Taking them off the lines is just too disruptive. In the future we may get the situation where it's possible but at the moment it's not.

The priority allocated to output over training raised grievances for operators as well as for the personnel department. It acted as another piece of evidence to operators that Telco's commitment to its employees was secondary to production objectives. In addition, when the training sessions were eventually held, the tensions between training and production developed a further sense of injustice amongst operators, as supervisors would demand extra effort to catch up on 'lost' production time:

> Sandra: Allan (the team leader) said because we've got a training session this afternoon, we've got to make extra units tomorrow to make up for lost time.
>
> Michelle: Allan's been pushing us really hard today. He said we had to make up for time lost yesterday due to training.

The most recent plan of the personnel department was to introduce work-based training through NVQs. However, mindful of the past difficulties he was not totally optimistic about the success of this initiative commenting:

> The problem with NVQ is that it may involve training operators in things that they don't need to know or do. Richard (the senior production manager) won't wear any non value-added activity.

In summary, training exhibited many of the conflicts apparent in other personnel clusters at Telco. It illustrated the internal tensions between good HRM practice and the day-to-day demands of production. It also acted as another indicator to workers of the low priority they were allocated by management, and the provision of training conflicted with the demands of

daily output targets. Having described and discussed key personnel policies, this chapter now moves on to analyse these. This analysis is developed using the three categories of social relations identified previously: knowledge, reciprocity and identity.

Knowledge

The issue of knowledge has been accorded considerable significance within the Japanisation debate, either as heralding a way by which workers can unleash their cognitive and creative potential (Adler 1993; Kenney and Florida 1993; Womack et al.1990), or as a pernicious method of appropriating what rightly belongs to workers and utilizing this as a means to work intensification (Garrahan and Stewart 1992). Underpinning both perspectives is the assumption that Japanese transplants will have in place a sophisticated mechanism for eliciting workers' knowledge. Neither of these perspectives is applicable in the case of Telco. There had been some rudimentary procedures to 'tap into' workers' knowledge through the kaizen scheme and the company council but both of these had atrophied. Similarly, there was little sign of actual commitment to extend and develop the skills and knowledge of workers through training. Practical training was limited to learning from workmates, while training which might have extended the skills and responsibilities of operators suffered due to the pre-eminent demands of production. Indeed, when training did occur it was to the disadvantage of the operators, as supervisors demanded extra effort levels to recover 'lost' time.

This apparent lack of managerial effort to harness the knowledge of the workforce is consistent with Delbridge's account of Nippon. There is however one interesting difference between the two companies. In the case of Nippon there were no formal systems to involve operators. At Telco, by contrast, there were some rudimentary systems, but these had broken down. The consequence of this was to send an unambiguous message to the workforce, namely, that there was a distinction between rhetoric and reality in relation to personnel policies. The withdrawal of the company council and the problems associated with kaizen acted as evidence to the workforce that management had no interest in the views and opinions of the workforce. Similarly, the continuous cancellation of training sessions sent a clear message that the achievement of production targets over-rode any concerns for training. There is therefore little surprise that the relaunching of the ESP system was greeted with cynicism. In the experience of the workforce, there was little indication that management were genuinely interested in the views of the workforce or that management had any real commitment to their own initiatives

Reciprocity

At Telco, both the formal and the psychological contract operated, in the main, to create a view among employees that they had few reciprocal obligations to the company. With reference to the formal written contract, one example which influenced my own early perceptions of the company was the reduction of the sickness allowance. My diary entry records my thoughts on the sick pay amendment, as a 'new starter':

> At induction today I was given an employee handbook. In it, the original sick pay policy was crossed out using a black felt pen and a new policy stapled in. This new policy effectively reduces the sick pay entitlement of employees. The downgrading of the scheme and the crude 'doctoring' of the handbook do not create a very positive first impression of the company's commitment to its employees.

It can also be argued that the adjustment of the payment system, in the form of the introduction of the 'turkey club' bonus, acted to diminish rather than sustain worker reciprocity, as its overall impact was to demotivate staff and increase turnover.

However, it was the unwritten psychological contract which demonstrated most clearly to the workers the limits of the company's obligations to them and consequently shaped their views of Telco. This contract has been defined as 'individual beliefs, shaped by the organisation, regarding terms of the exchange agreement between individuals and the organisation' (Rousseau 1995:9). It was the belief of many operators at Telco that the company did not treat its workforce appropriately. The psychological contract can be (at least partially) shaped during the recruitment and induction process, where employees may pick up and internalise 'signals' before they start their designated task (McFarlane and Tetrick 1995). Worker perceptions of the limits of Telco's commitment to its employees were drawn to my attention during my induction 'tour' of the production area. Here I was introduced to Lorraine, who recounted her bone marrow 'experience' and told me not to expect any sympathetic treatment from the personnel department.

This was a story she told to every new employee, with the message that Telco did not meet the expected norms of a 'reasonable' employer. More generally, the psychological contract was shaped by the 'broken promises' over the company council, kaizen scheme and training, discussed above, all of which generated cynicism and mistrust. Management were viewed as having no commitment to initiatives they had instituted, initiatives which were supposedly aimed at developing employee involvement. Finally, the psychological contact was influenced by a perceived absence of 'procedural justice' (McFarlane and Tetrick 1995), exemplified by the widespread perception of unfairness. Worker claims of unfairness were not necessarily related to the policies per se, rather they were often directed at what employees saw as the inconsistent implementation of policies, as illustrated by the disciplining of absentees and 'pass-outs'.

Concerns relating to unfairness were expressed across all sections of the workforce. However, they did seem to be most keenly felt and verbalised by mature workers. These workers often drew unfavourable comparisons between their perceived injustices at Telco and their experience in previous workplaces. These past employment experiences are central to employees evaluation of their current psychological contract. As Rousseau observes 'the saying "what is past is prologue" applies in individual-level psychological contracting.' (1995:219). Thus while the recruitment of an older age group was viewed by management as adding a degree of stability and maturity to the shop-floor, it helped to create a climate that was critical of management. Workers have 'histories', in the form of experience and expectations from

previous workplaces, that they bring with them. These 'histories', in the case of Telco, contributed to a feeling of antagonism from many of the mature workers towards management.

It is not being argued here that all employees were critical of all policies. Employee views were much more diverse than that. Some employees expressed a positive view of working for Telco, as my diary records:

> Working on the machine next to Wendy today. She has been here ten months, her first job since leaving school. She thought it was OK, better than she expected. Her friends had all told her not come because it wasn't a good place to work - you were treated badly. That had not been her experience – she felt they treat you all right.
>
> Talking to Heather and Chris at break. They both said Telco was O K, you weren't treated too badly - it was clean , you all had your own locker and uniform and it was secure employment.

Other workers, whilst articulating negative views concerning fairness or lack of organisational commitment, also expressed positive views about particular policies. For example, although some mature workers were the company's keenest critics, they voiced appreciation of the company's de facto non-redundancy policy, which meant that when production demands were slack, workers had been used for general cleaning and housekeeping tasks, rather than being 'laid off'.

Notwithstanding these positive views, what did emerge on balance was the climate of disaffection felt by the workforce, and this was generated, at least in part, by their experience of the formal and psychological contracts.

Significant elements in both these contracts indicated to many of my workmates that Telco had failed to deliver its reciprocal obligations.

Identity

The main point concerning identity to emerge from the study of the personnel network was the existence of a strong anti-company ethos. Workers, in the main, developed an identity that was antagonistic towards and in opposition to management. The controversy over pass-outs, the seemingly arbitrary nature of attendance control, the cancellation of training and the demise of the company council and kaizen scheme all acted to create an environment where workers felt that management had no respect for or interest in them. My diary was punctuated by comments that echoed this disaffection. Observations such as "they (the management) treat you like rubbish", "all they care about is getting stuff out of the door" and they're not interested in the operators", were commonplace. The extensive occurrence of such comments suggests that they cannot simply be 'written off' as a few individual 'whinges', but rather represent both the individual experience of many workers and also a shared collective view which was a barometer of the overall climate of workplace relations at Telco. The impact upon worker identity was to create a situation where operators felt little sense of commitment to company; their main sense of loyalty, as will be shown in the next chapters, was to their workmates on the line and this often involved them in actions which circumvented managerial instructions.

Personnel Policies and Japanese transplants

Having explored the relationship between the personnel network and the formation of worker attitudes at Telco, this section moves on to make some, broad observations which relate the company's personnel policies to the wider Japanisation debate. First, Telco's personnel policies re-affirm the need to recognise the diversity of practice amongst Japanese manufacturing transplants (Elger and Smith 1998; Milkman 1991). While some transplants, such as Mazda, Subaru and Nissan, might be characterized as having a high degree of application (Abo 1994) of Japanese practices, this is certainly not universally true, as illustrated by the rudimentary selection procedures and the lack of opportunity for employee involvement in problem-solving activities at Telco.

Second, the actual (mal)functioning of personnel policies presents an alternative to that academic literature which has emphasised a coherence of both purpose and practice in the policies of Japanese manufacturing transplants. As was argued in earlier the chapter, both the HRM and the critical perspectives are founded on a functionalist view that production and personnel practices worked as they were intended and provided a system of coherence and mutual support.

The data from Telco add to the empirical material that challenges this view of a coherent integration of personnel and manufacturing policies (Elger and Smith 1998; Grant, 1996). The relationship between personnel and production at Telco can be characterised as one involving contradiction,

conflict and compliance. Contradiction represents instances where personnel policies did not operate in the manner expected, thus causing production tensions. An example is the recruitment of school leavers who did not prove the keen and malleable workforce that Japanese managers had expected. Conflict denotes cases where the objectives of the personnel and those of the production were seen to be in competition. For example, training was forgone so as not to incur the opportunity cost of lost production. Compliance signifies the introduction of policies to meet production needs which were viewed by personnel as counter to their interests. This occurred with the instigation of the policy to recruit temporary workers. This lack of coherence between personnel policies and the demands of production was, in the main, the consequence of tensions within and between managerial policies and not the result of conflicts between management and labour.

A final key feature of personnel practices at Telco was that they were subject to review and adjustment, with policies becoming amended over time. This draws an important distinction between the transfer and the evolution of policy. While the question of transfer is one which has generated significant academic research (Abo 1994; Dedoussis 1995; Kenney and Florida 1993; Kenney and Florida 1995; Milsome 1993; White and Trevor 1983), the issue of evolution has not always been addressed. Consider, for example, the study conducted by Abo and colleagues into Japanese manufacturing transplants in America (Abo 1994). Their analysis is based on an application - adaptation scale. Application represents the transfer of Japanese practice 'to the maximum extent possible' (Abo 1994:19), whilst adaptation denotes a

'significant modification to the management and production system, by adopting many of the local operating procedures' (Kamiyama 1994:29). Abo and colleagues add some finesse to this model by adding levels of adaptation and accommodation, but this dyadic structure lacks the analytical sophistication to capture the social nature of workplace relations and the consequent evolution of policy. Their model allocates to management the role of sole strategic actor in determining policy; management decide which policies can be applied and which have to be adapted to local operating procedures. The picture presented is one of managers selecting, from a range of Japanese and local practices, those policies which are the best 'fit' for their particular transplant company. The potentially contested nature of policies is not recognised, nor is the fact that they might not achieve the objectives allocated to them. Apart from general references to inter-country differences of culture and institutions, workers seem strangely absent from this model. Consequently, Abo's model presents a static picture of policies, with no consideration of the possibility of ongoing policy change.

The evidence from Telco indicates that for a comprehensive analysis of personnel policies any model needs to include adjustment in addition to application and adaptation. This refinement is supported by other studies which suggest that the issue of policy amendment is a significant one, as Japanese transplant companies jettison some policies and procedures, amend others and embrace new ideas (Broad1994; Elger and Smith 1998; Leopold and Hallier 1997; Wilkinson and Ackers 1995).

Table three presents an analysis of adjustment at Telco along two dimensions: the nature of the changes and the cause of these changes. Using this analysis a number of key points emerge, some of which are at variance with other studies of Japanese manufacturing transplants. The first concerns the extent of change; policy amendments at Telco occurred across whole clusters of personnel concerns, suggesting that Abo's neglect of the dynamic of accommodation is a major omission.

Table 3

Adjustments in personnel policies at Telco

Nature of Adjustments	Causes of Adjustments
Cancellation of company council	Lack of value attached by the company
Re-launch of kaizen scheme	Lack of value attached by the company
Recruitment of temporary operators	Commercial considerations
Problems with planning internal training and possible introduction of NVQ's	Commercial considerations
Recruitment of 'mature' workers	Employees not responding 'appropriately' to Japanese personnel practice.
Turkey club	Commercial considerations
Change to 'sick pay' scheme	Employees not responding 'appropriately' to Japanese personnel practice.
Change to uniforms	Response to employee request

Differential application of 'clocking on' procedures	Managerial (mal)practice
Reserved car parking unofficial practice for managers	Managerial (mal)practice

The extent of change also represents a significant difference from other studies which have reported amendments to single policies, such as company councils (Broad 1994a), or to particular strategic clusters, such as recruitment and retention (Elger and Smith 1998), but not across the spectrum of personnel policies, as was the case at Telco

A further significant issue is the differing causes of adjustment. Accounts of Japanese transplants in Britain have highlighted the way in which amendments to personnel policies are the consequence of direct challenges from the workforce, or relatedly, of unforeseen and unwanted worker responses to particular policies (Broad 1994a; Wilkinson and Ackers 1995). At Telco, while employee action did have an impact on adjustments to personnel policies, it was just one of a number of causal influences, as the personnel department struggled to meet the sometimes competing demands of workers, management and production targets. Other significant forces bearing on accommodation were: pressures to achieve production, the seeming lack of value attached by personnel to the original employee involvement schemes and managerial (mal)practice in the form of managers manipulating or ignoring workplace regulations.

Summary

Employee attitudes at Telco were clearly embedded in the personnel network, represented by personnel policies. A discussion of knowledge has illustrated that there was scant evidence at Telco of workers contributing to 'problem-solving' activities. Moreover the distinction between reality and rhetoric in relation to the actual operation of company policies worked to develop a culture of cynicism and mistrust of management. From the workers' viewpoint, management was disinclined to listen to any suggestions made, and operators' needs were always secondary to production targets.

This culture of mistrust was illustrated further through the discussion of reciprocity. Here it was argued that Telco had failed to deliver its reciprocal obligations and that the (mal)functioning of both the formal and the psychological contracts generated a situation where the company was perceived as an uncaring employer and a bad place to work. The overall consequence of the personnel policies was to develop an anti-company identity for many of the workers. The picture presented is very different from that of the high commitment organization portrayed by advocates of Japanisation. It has more in common with Grant's (1994; 1996; 1999) study of Renco, where workers' perceptions of management actions as low-trust created an atmosphere of suspicion and confrontation.

More broadly, the actual functioning of personnel policies also differs from the coherent, supportive and functionally unproblematic accounts of some transplant companies. The operation of personnel policies at Telco presents a volatile picture characterized by tensions and adjustments. This

does not mean, of course, that personnel policies in all Japanese transplants do not work, rather, that the potentially problematic nature of their operation needs to be recognised and that it is both theoretically and empirically unsound to simply infer the outcomes of these policies merely from their existence.

Chapter Five

Workgroup Networks: Managerial Control Systems

Having discussed the personnel network at Telco in the previous chapter, this study now moves on to explore the workgroup network. This chapter concerns the managerial control systems experienced by the workgroup at the point of production. It begins by outlining the organisation of production and then discusses the composition and functions of the workgroup. A five-fold classification of managerial control is then presented and detailed. The chapter concludes with a brief summary of the main features of the control systems.

This is one of two linked chapters that have the workgroup as their focus. The subsequent chapter goes on to discuss and analyse employee responses to the managerial control systems outlined below. Dividing the chapters in this way stresses the important distinction between design of managerial control systems and their operation in practice, reflecting the view that these systems do not always function in the manner intended (Allen 1994; Thompson and Ackroyd 1995).

The Organisation of production

The organisation of production at Telco replicates that of their parent company in Japan. The plant was designed in Japan, was equipped solely with Japanese machinery and was installed by Japanese engineers. This type of transfer, using predominantly Japanese technology and production layout,

is typical of Japanese transplants operating as first-tier suppliers in the motor vehicle industry (Kumon 1994).

One feature of production often associated with Japanese manufacturing methods is just-in-time (JIT) (Schonberger 1982). There is however some difficulty in determining whether companies are using JIT as it is a disputed concept. With reference to internal JIT systems, one working definition of JIT proffered by Graham is that it is 'a method of inventory control in which the company keeps parts stocked on the line for only a few hours of work' (1994:140). Under this definition the production system at Telco can be classified as JIT. The particular components required for each batch were selected and brought together in the warehouse according to the demands of that specific model. These were then moved onto the factory floor to coincide with model changeovers. As lines manufactured several models a day, the parts were only on the lines for a few hours at most.

A further feature of internal JIT is the minimisation of buffer-stocks between work stations (Roper et al.1997). At Telco work in progress varied from a few seconds to a maximum of ten minutes worth of stock. In many cases, the capacity to build up buffer-stocks was constrained by the layout of the line which often limited the number of units between work stations to single figures. The instances of ten minute buffer-stocks occurred in a number of sub-assemblies producing fragile electronic movements. In order to protect these movements they were packed in a special crates holding 24 units (approximately ten minutes worth of production) and each crate was transferred between work-stations. It was the expectation of management that

there should be no more than one crate waiting to be worked upon between each station. To police this expectation the Japanese Managing Director would patrol the factory floor insisting on 'one-to-one' operations and reprimanding supervisors who had allowed any build up of excess stock between work-stations.

A further feature of Japanese manufacturing practice is total quality manufacturing (TQM). The TQM approach to ensuring quality is to make it the responsibility of all employees within the organisation, rather than merely the function of the quality control department (Dawson 1994). Under TQM, operators have greater accountability both for the quality of their own work and that of their fellow workers. At Telco a wide range of systems were in place to make workers responsible and accountable for product quality. These included: work standards above each work-station which detailed exactly how to perform tasks, the use of statistical process techniques at some work-stations and visual and electronic quality monitoring systems at various stages on the line. These processes will be discussed in greater detail later in the chapter; it is sufficient to note at this point that operators were allocated a significant role in the achievement of product quality.

There are three production zones at Telco: a printed circuit board area, a plastics moulding shop, both of which supply the third area, the product assembly lines. This chapter will focus on the product assembly lines, as this is the area in which I worked. The product assembly line is also the one which has the largest number of employees, and which manufactures the company's sole externally sold product. The product assembly area consists of seven

product lines, with each line dedicated to a particular car company or companies. It is the line that constitutes the basis for the workgroup, or in Telco's parlance 'the team'. This study will also refer to the workgroup at Telco as the 'team'.

The team at Telco

Each line team is staffed by a number of workers (usually between 15 and 25) and is managed by a supervisor with the assistance of a chargehand. Workers tend to stay within one particular team although they can be transferred permanently to another line (by managerial decision) or 'loaned' if another line is having staffing difficulties. In common with many Japanese transplants there are no 'floaters' to cover for absence (Sewell and Wilkinson 1992a), although the chargehand usually deputises for any operators who might have left the line temporarily.

Each line has a daily target which is based on the models produced and on the number of operators. Batch size is quite small, usually between 50 - 300 units, with different models varying slightly in production complexity and speed of construction. A summary of the production data of a typical line is provided in figure three on the following page.

Figure 3

A4 Line

10 model variants

14 major parts variants

Line target: around 900 completed units per day

Batch size: maximum 300, minimum 63. (During my time on the A4 line, the batch size was usually between 100-200 units. On a few occasions, changeovers were as many as ten per day).

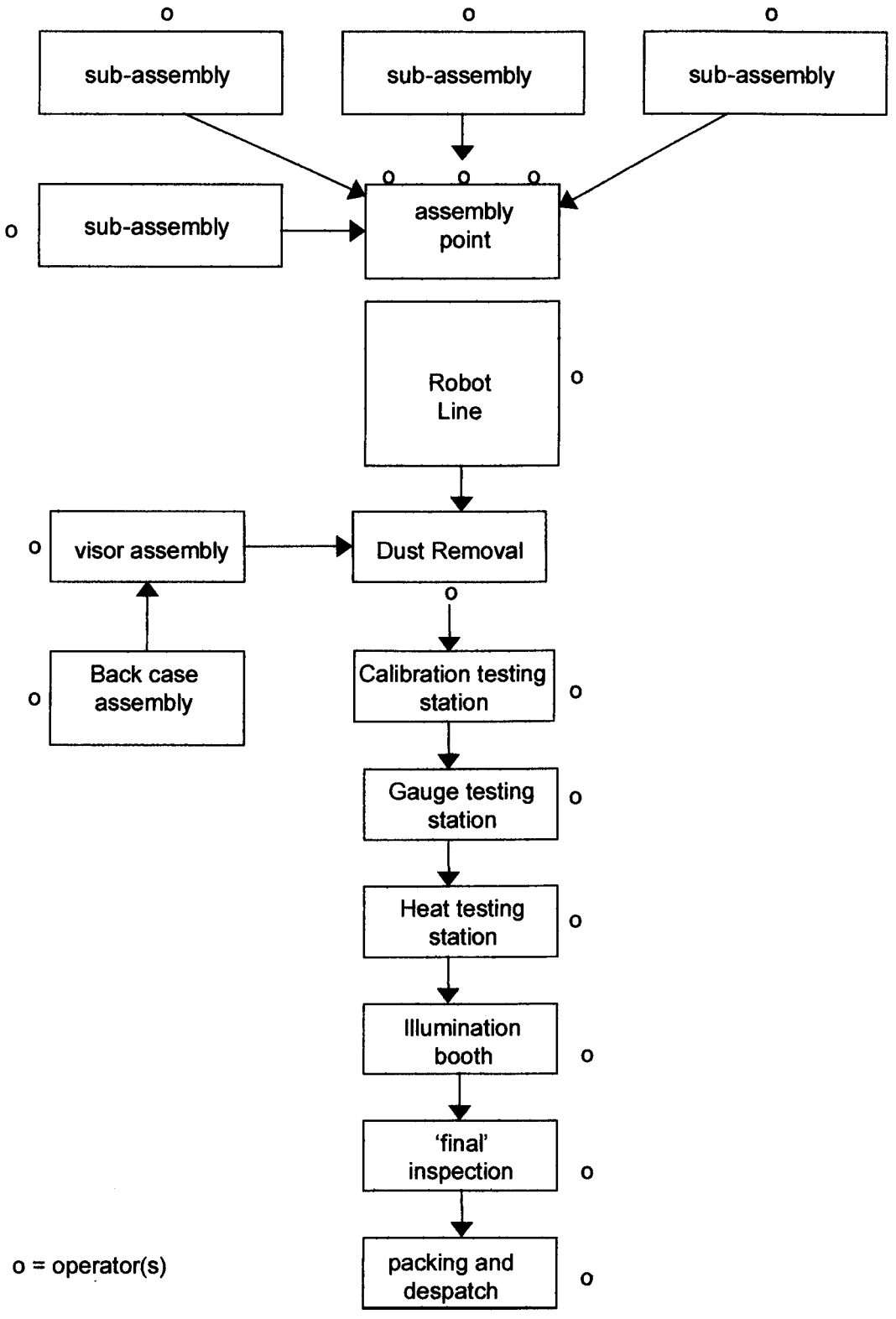
25 Operators

Highest job cycle time 25 seconds

Notwithstanding slight differences between lines, the production process generally conforms to the pattern outlined in figure four. At the head of the line are sub-assembly cells which 'build up' the components that constitute the product. Typically there are four sub-assembly stations, each staffed by one operator. These sub-assemblies are fed through to an operator (or operators) who assembles the component elements. The part-assembled units are then fed onto a robotic line, which performs a series of drilling and screwing operations. The robotic line is staffed by an operator who ensures that the machines have the correct screws and that it is performing its task consistently. The unit is then cleaned with an air jet to remove any dust particles prior to receiving its casing and visors. This completes the building process. Once constructed, the unit then goes through a series of manual and

Figure 4

Typical Line Layout



electronic testing stations. Each unit then moves to 'final assembly' for an overall visual check. Finally, the approved unit is packed ready for dispatch.

Operator tasks are typically short-cycle assembly or checking tasks. On sub-assembly, for example, one of my tasks involved the following operations:

> Locate the base sub-assembly onto a jig. Add plastic guard to base sub-assembly, making sure that it fits correctly by locating the lugs on the small pins of the jig. Press button to activate the machine to screw the sub-assembly together. Add fascia piece onto sub-assembly. Locate it in position manually with two small pins using a hand tool. Time for operation, 24 seconds.

The above description of the production process has similarities with other Japanese transplants. The organisation of machines around 'family groups' rather than functional areas, small batch production and in-process checks are all features found in other research (Milsome 1993; Oliver and Wilkinson 1992; Sewell and Wilkinson 1992a, 1992b). Similarly, the unskilled/semi-skilled nature of the production tasks means that Telco can be characterised as a 'screwdriver operation' which is typical of many Japanese transplants (Morris et al.1993).

It is also interesting to note that the organisation of production at Telco was configured around a 'traditional' linear organisation. It has been suggested that Japanese companies have a preference for cellular or U-shaped organisation in order to facilitate teamwork and communication (Oliver

and Wilkinson 1992). Telco had experimented with U-shaped lines but, according to one manager, this led to a situation where:

> operators were talking to one another not about the quality of work, but about what she was going to cook for tea or whatever....when we re-laid the line we straightened it out.

During my time with the company, the straight production line was in evidence throughout the factory floor. This meant that while management designated the line as a team, the physical configuration of the workstations did not facilitate teamworking. This raises the issue of what did management at Telco understand by teamwork?

In conceptualizing Japanese work teams generally, it has been argued that a distinction needs to be drawn between the Japanese version of teams and the autonomous work groups of Anglo-Scandinavian origin[5] (Buchanan 1994). Autonomous work groups imply self-managed groups with responsibility for production decisions, characteristics that are largely absent in Japanese teamworking. This was certainly the case at Telco where decisions on work scheduling and the organisation of product were made solely by management. Moreover, as the previous chapter illustrated, the only attempt to involve employees in continuous improvement activities was the abortive suggestion scheme which, when in operation, focused on the individual and not the team. Thus the team at Telco does not satisfy even the limited definition of Japanese-style teamwork where 'teams examine how their

[5] Buchanan argues that autonomous work teams 'were first formulated in Britain and have been most extensively applied in Scandinavia' (1994:220). There are also many British examples of teams operating with no autonomy.

otherwise traditionally run manufacturing facility can be continuously improved' (Buchanan 1994:220).

What, then, was the purpose of teams at Telco? From a managerial perspective the teams appeared to perform two major functions. First, they represented an organisational unit within which information could be disseminated, jobs could be rotated and a training matrix could be applied. Second, and more importantly in the context of this discussion, the team represented a unit of accountability, being held responsible for the delivery and achievement of targets.

One physical manifestation of the significance of targets was the large whiteboard that stood at the top of each line. This whiteboard displayed the current day's target, the previous day's target and actual output, the number defective units recorded on the line and the major sources of operator error for the previous day. It was a public pronouncement of the 'effectiveness' of each work team's performance. To facilitate this level of accountability a number of managerial control systems were in operation. This chapter now goes on to categorise the control systems experienced by the team.

Controlling the Line

This section develops a classification of managerial control systems on the line at Telco. A number of typologies of control have been advanced to explain both capitalist workplace relations generally (Edwards and Heery 1989; Edwards 1986; Friedman 1977) and managerial control within Japanese transplants more specifically (Graham 1994). None of these

standard typologies is completely appropriate here, because they do not focus solely upon the issue that concerns this chapter, namely, control at the point of production.

Participation and observation suggest that Telco's managerial control strategies at the point of production can be grouped into five categories: reduction of dependence upon the operator, monitoring and surveillance, pacing, time control and personal control. Each of these categories has specific mechanisms of control associated with it. These strategies and mechanism of control are presented in table four and discussed in the sections that follow.

Table 4

Typology of Control Systems at Telco

Control Strategy	**Mechanism of Control**
Reducing dependency upon the operator	Poka-Yoke Machine checking
Monitoring and surveillance	Recording procedures Quality control department Traceability
Pacing	'Efficiency quotient' Standard operating procedures
Time control	Morning briefings Bell-to-bell working 'Cleaning up' time Toilet breaks
Personal control	Management information systems Autocratic authority

There is no claim that these five strategies are essentially new. For example, personal control is a characteristic of Edwards' (1979) 'simple control', Friedman's (1977) 'direct control' and Rose's (1998) 'supervision structure'. Thus while complete typologies of managerial control provided in the literature have been rejected as inappropriate, selected categories within these typologies which concern control at the point of production are of value.

Reducing dependence upon the operator

Reducing management dependence upon the operator is one of the two key components in Edwards and Heery's (1989) model for managerial control. One of the strategies identified by Edwards and Heery under the banner of reducing dependency is management replacing workers with machines. This is relevant to the control strategy at Telco. Although the machines did not replace workers as such, they did take over the detailed operating functions at some work-stations and also acted as 'fool-proofing' devices at others. The aim of introducing machinery in these ways was to reduce the company's dependency upon operators by circumscribing their input into tasks. Reducing dependency at Telco was the process of creating operating procedures that, as far as possible, marginalised any reliance on workers in order to minimise manufacturing errors.

One way of reducing reliance on operators was the development of a poka-yoke system, which a production engineer at the company described:

> It's where you design a fixture on a component so it is idiot-proof. It will not go in upside down or sideways - it will only go in one way. That

> then takes all the onus off the operator because she picks it up and it only goes in the correct way. You make it foolproof so they can't get it wrong'.

Poka-yoke was not an isolated example of reducing reliance on operators, but, rather, formed part of a wider programme to minimise Telco's dependency upon its employees. The production engineer explained:

> Where possible you try and take the onus off the operator to look for quality and put it in a machine that is more reliable. We are now introducing more vision systems into the company where the computer and the camera are viewing for things rather than getting the operator to view for them. Where possible we are putting robots and vision systems in to take the responsibility off the operator.

This reduction of dependency at Telco was not driven primarily by an economic rational of replacing people with technology, as operators were still required to load and supervise the machinery, but as a mechanism to try to ensure higher levels of product quality by reducing the capacity for human error.

Monitoring and Surveillance

Significant recent academic interest has been generated concerning monitoring and surveillance of operators, both in the manufacturing and non-manufacturing sectors (Sewell and Wilkinson 1992a, 1992b,1993; Taylor and Bain 1999). At Telco there was an extensive system of monitoring and

surveillance which stemmed from three mechanisms of control: recording systems, the quality control department and the traceability system.

A key function of the recording systems is the daily identification and tallying of defective units. It is a procedure which permeates every stage of the line. During the build process, operators on sub-assembly are expected to spot and note any errors, either from their own work, that of their colleagues or resulting from faulty parts. The various 'testing stations' that are located on every line exist solely for the purpose of detecting malfunctioning units. At these 'testing stations' operators mark the casing with a coloured crayon (different colours indicate different work stations) to signify that it has been checked and is of an appropriate standard. The penultimate station on each line, the illumination booth, performs an electronic test of key functions. At the end of the test, the computer screen flashes either 'OK' or 'ER' (error). The test machine also emits a buzz if a unit fails. The cause of failure can either be defective parts or faulty insertions by operators upstream in the production process. At the last station on each line the 'final inspector' has the responsibility for checking the visible quality of the unit and identifying any burrs, blemishes or other visible defects which have not been 'spotted' earlier on the line.

It is company policy that each defective unit is logged and the cause of defect is recorded, either as 'self' i.e. operator error, or 'other' i.e. faults resulting from defective parts or machine error. At the end of each shift the various recording sheets are collated by the supervisor onto one record. This recording procedure serves as a constant reminder to operators that their

performance is under scrutiny. At morning team assembly the number and type of defects is read out to the team. If the defect rate due to operator error has been high the previous day, the supervisor would inject a note of warning, as the following diary extract indicates:

> Paul, the supervisor, chastised the line at morning meeting today over the number of defects. He said "we had a lot of problems with dust in the units yesterday - this level of defects to 'self' is not good enough. Jeff, it's your job to blow the dust out, you need to take extra care. Everybody else, make sure you check for dust before you pass the units on, and make sure your materials and work-stations are dust-free.

The recording process also applied to output figures as well as defect rates, with each line allocated a daily production target by management. At every morning meeting the previous day's actual and designated output levels were announced. Failure to meet the target could result in a reprimand for the team, whilst exceeding the allocated figure would bring words of praise.

This monitoring procedure provides a way of allocating responsibility and blame both to individual members and to the team as a whole. This blame-culture was exacerbated by the public display of performance. As discussed above, the whiteboard located at the head of each line was updated every morning to give the actual and target output figures and the number and type of defects for the previous day. Whilst this display of performance was not as Draconian as the measures reported by Nippon CTV, where individual operators had cards over their stations indicating the number

of faults they had perpetrated (Delbridge 1998), it was a constant signifier of a regime of surveillance at Telco.

A second mechanism of monitoring and surveillance involves the quality control (QC) department. Although the responsibility for product quality is devolved to the work team, a separate QC department is still retained to 'police' quality and quality procedures. At the start of every day and at the beginning of each batch, a number of units are set aside for QC to inspect. If these fail, QC can order the whole batch to be inspected by the line. QC staff also occasionally 'patrol' the line to check that operators are following the correct procedures and that they have the appropriate work standard displayed. This function of the QC department indicates that although the responsibility for quality is devolved to operators, a practice commonly associated with Japanese manufacturing techniques (Oliver and Wilkinson 1992), at Telco management were unwilling to rely solely on operators and used the traditional inspection role of QC to reinforce line-monitoring procedures.

A further mechanism of monitoring and surveillance at Telco was traceability. Traceability represents the process which allows surveillance procedures to be extended beyond daily accountability, as it provides management with a way of tracking faulty work even when the product has left the company. Traceability is organised around a batch data identification procedure called 'lot numbers'. Each batch of units is allocated a lot number. This number is printed on a computer-generated label on the casing of each single unit. When the first unit of each new batch travels down the line, it is

accompanied by a lot data sheet. Each operator signs their name on the lot data sheet against the appropriate function, signifying that they are responsible for that operation and that they are using the appropriate parts. This combination of lot numbers and data sheets allows errors to be tracked back to specific operators during the guaranteed life-cycle of the product, as the lot data sheets are photostatted and kept in the company archives for ten years. This function of traceability, to hold operators responsible for the quality of their work even when it has left the factory, was explained clearly to me during my first day induction by the personnel department. Neither is traceability a hollow threat, as the engineering director explained to me:

> We keep the lot data sheets and we do use them. If a unit comes back and there is an obvious fault that should have been picked up we go back to the archives and see who was responsible. We will talk to that person about their mistake. We have done that, checked back on any obvious errors - it's an essential part of our quality systems.

Pacing

'Pacing' denotes the intensity of work experienced by operators. One determinant of pacing is management's judgment about how much actual work can be expected/ extracted from operators. For each operator on the line at Telco an 85% 'efficiency quotient' is assumed. This presupposed that operators will be engaged on direct production duties for 85% of their allocated working time, excluding official breaks. The remaining 15% is earmarked for changeovers (averaging at four minutes per new batch),

housekeeping, toilet breaks, operator fatigue and miscellaneous delays. This figure of 85% efficiency was allocated by the Japanese parent company when Telco was first established.

The pace at which operators worked was linked not only to the 85% efficiency quotient but also to standard operating procedures. Each operation had a time allocated to it. This was determined by measuring the number of seconds taken to perform that task following operating procedures to the letter of the work standard. Line speed was set by the task with the longest cycle-time, which was generally between twenty four and twenty six seconds. The engineers and supervisor would try to balance the line so that each operator was working at a similar pace, irrespective of the job cycle-time of their work-station. However, an exact match across all tasks is not always achieved. The difficulty in reaching a 'balanced' line was not only a consequence of slight time differences between work stations, but also a result of variations within work stations as the time to complete a particular task might vary across models. This meant that standard times at individual work stations could fluctuate during the day as different batches were produced. Supervisors would move staff up and down the line during the day when bottlenecks occurred.

Time Control

The ability of capital to appropriate the concept of time in order to impose discipline on workers is a feature of the emergence of industrial capitalism (Thompson 1968). This control of time by capital is no less

important in the 'new' workplace. Production levels and work tasks, at Telco as in other Japanese transplants (Delbridge 1998; Graham 1995) are calculated on seconds worked. Andy, a supervisor at Telco commented:

> Each operator, working at 85% efficiency, is available for 450 working minutes in a day - that is 2,700 seconds. It's my job to make sure that I get that amount of work out of them.

Whilst accepting that this concern with the extraction of maximum labour from purchased labour power is not new (consider Scientific Management for example), heightened product market competition has led capital to squeeze the porosity of the working day. For Telco the ability to control time in detail is an important objective. This is achieved in a number of ways: bell-to-bell working, morning briefings, 'cleaning up' time and toilet breaks.

Bell-to-bell working is a common feature of Japanese transplants, although as Danford (1998b) observes, its significance is rarely acknowledged. Bell-to-bell working was in operation at Telco. Five minutes before the start of work a 'warning' bell would sound. The start-of-work bell signified attendance at the team-briefing rather than merely arrival on the premises. Five minutes before the end of the working day the 'cleaning-up' bell would sound, followed, exactly five minutes later, by the final bell of the day. Breaks during the working day (two ten-minute tea breaks and one half hour lunch break) were also delineated by bells. This use of bell-to-bell working allowed supervisors and chargehands to monitor any infringements of timekeeping.

The daily morning briefings also acted as a form of time control. Company documentation states that 'there is no time allowance for clocking in/out as there is in some companies (e.g. 3 minutes change of clothing allowance after official start time/before official finish time etc)'. The morning briefing provided a way of monitoring this rule. Every morning briefing started exactly on the eight o'clock bell. The first action of the supervisor was to check who was present. If any operators were slightly late, they were easily identified and a comment from the supervisor such as "here by the bell please not one minute after" or "eight o'clock's the official start time" would greet their arrival.

The end of working time was signified by a bell at 4.25 pm, leaving five minutes for 'cleaning up' time or preventative maintenance before the final bell. Telco's management was anxious that even this last five minutes of the working day should be used 'productively', as the following extract from an internal memorandum, circulated by the senior production manager, indicates:

> The company allocates a specific time each day for TPM and cleaning up the assembly area. This time is from 4.25 pm until 4.30om ... if you have completed your TPM and your immediate work area is clean and tidy you are expected to help clean the rest of line.

The final aspect of time control concerned toilet breaks. Although time was formally allowed within the 15% 'non-productive' time for toilet breaks, the attempts by management to control these were a source of conflict in the initial start-up period of the company. The production manager commented:

> One of my girls (sic) was walking across the shop-floor about 9.45 am to go to the toilet and the break was 10 am. One of the (Japanese) directors was walking across and asked her where she was going. She said "to the toilet" and he said "go back and go in your own time". She came to me all upset and within a minute everyone on the shop-floor had heard about it. I got hold of the (British) production director and said "you can't do this, you can't turn round to someone and say you can't go to the toilet. They are not robots". I had to go and ask the (Japanese) director to apologise to the operator... If you try and impose only going to the toilet in your own break time you wouldn't have a workforce.

The official policy during my period on the line was that toilet breaks could be taken, but that these were at the discretion of the supervisor and chargehand.

Personal Control

Personal control[6] as adduced here, denotes the shopfloor influence exerted by one manager through both role and force of personality. The individual concerned is Ian Hollins, the production assembly manager, who ruled the factory floor in the manner of an autocrat. Hollins' interpretation of management seemed to be firmly based on McGregor's (1960) Theory X of leadership which is grounded in a belief that:

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[6] Personal control is used by Richard Edwards as a sub-category of simple control and in his framework the team specifically alludes to direct control by the owner/capitalist. In the thesis presented here personal control is used to denote control by the representatives of capital, rather than the owners.

> People are lazy, prefer to be directed, want to avoid responsibility and are relatively unambitious. They have to be coerced, controlled, directed to make them work towards organisational goals (Hannagan 1998: 39).

My first encounter with Hollins has been documented in chapter four; this was the occasion on which I arrived late for a pre-placement discussion and was told by Hollins that punctuality would be expected of me if I were to come and work at Telco. Hollins' abrasive and autocratic style characterised his interaction with operators, as the following diary entries testify:

> Mandy from A1 line told me that they had received a "bollocking" from Hollins at the morning meeting. The line target was 1,100 and they had only made 800 the previous day. One of the workers argued that there had been a problem with parts. Hollins said that he knew this, but that this was just an excuse, the line should have reached its targets.
>
> Dave was 'sent upstairs' today for a telling off about timekeeping. Apparently Hollins spent the time shouting at him.
>
> Rachel said she was having difficulty keeping up with line speed as she had been moved on to a new job. She said that Hollins said he would be 'on her back' to make sure she kept up.

Hollins' approach to management and his domination of the shopfloor corresponds to Edwards' category of simple control. Simple control exists where owners or supervisors in small and medium-sized businesses wield power in authoritarian manner. Edwards comments:

> These bosses exercised power personally, intervening in the labour process often to exhort workers, bully and threaten them, reward good performances and generally act as despots, benevolent or otherwise (Edwards 1979:19).

Although this form of control was a feature of early capitalism, it has continued to exist. This is supported by recent survey data that suggests technical, skilled and non-skilled workers have experienced an increase in simple control during the 1990s, as evidenced by tightness of supervision (Gallie et al.1998). Telco not only provides case study support for these survey findings, it illustrates how the organisation of production associated with Japanisation can facilitate personal or simple control by enhancing the range of data directly and promptly available to management. Under Fordism, the collection of performance data for management has been characterised as a slow and costly procedure relying on bureaucratic 'relays' of intermediaries (Sewell and Wilkinson 1992a). By contrast, the advent of the technical and social organisation of production associated with Japanisation has increased the amount of data available to management and the speed of access to this information. This has been achieved by eliminating some of these intermediate posts and devolving their functions to the team, whilst simultaneously intensifying the monitoring and control systems at the point of production. At Telco, significant amounts of production information were available to Hollins on a daily basis (and sometimes more frequently), making it possible for him to exert personal control over the shopfloor.

It is not being suggested here that employees in all Japanese transplants will be subjected to the same domineering approach as those at Telco. What is being argued is that while some studies of Japanese transplants have reported the demise of personal control (Delbridge 1998) personal control is not necessarily inconsistent with strategies of heightened monitoring and surveillance. Quite the opposite in fact; the data emanating from high surveillance regimes can act to sustain and stimulate personal control.

Summary

At Telco, management control incorporated a range of strategies, supporting the view that it is generally inappropriate to reduce control strategies to a particular type within one organisation (Edwards 1986). There are a number of general features of these control systems. The first is that they are based on a 'low trust' managerial view of the workers, as illustrated by the reduction of operator dependence and the plethora of monitoring and surveillance mechanisms. Second, the control systems have two objectives, the attainment of output levels and the generation of product quality. It has already been suggested in the previous chapter that the demands of output override other considerations, such as training. This raises the question of whether both quality and quantity are attainable at Telco, or if, as other studies of Japanese transplants have noted, they are contradictory objectives (Grant 1996). Thirdly, while innovative forms of control have been identified, for example the use of electronic monitoring, these exist side-by-side with

more traditional control methods, such as personal control. Indeed, it can be argued that the development of 'new' forms of control has increased the potential of the traditional forms, rather than supplanting them. Finally, the control systems at Telco exhibit many of the features associated with the 'emasculation' of the workforce and the demise of employee resistance (Delbridge et al.1992 ; Delbridge 1995; Garrahan and Stewart 1992; Sewell and Wilkinson 1992a, 1992b, 1993). This contested issue of employee responses is the basis of the next chapter.

Chapter Six

On the line: Employee Responses to Control Systems

This chapter deals with the responses of the workgroup to the control systems at the point of production outlined in the previous chapter. It is widely recognised that there is often a distinction between the objectives attributed to control systems and the actual outcome of them (Allen 1994). As the characterisation of the factory floor as a frontier of control suggests, workers challenge certain control mechanisms, accept some and even 'police' others. This diversity of response characterised the reactions of employees to management control systems at Telco.

This chapter begins by considering worker responses to the various types of control at Telco, namely, reducing dependency, monitoring and surveillance, pacing, time control and personal control. It then analyses these responses in two ways. First they are categorised and discussed with reference to resistance and compliance. Second, they are analysed in relation to the categories of social relations identified earlier, knowledge, reciprocity and identity. Finally, in order to discus issues of continuity and change, the labour process at Telco is compared with that of UMAC, a first-tier supplier to the motor industry researched some two decades earlier (Cavendish 1982).

Responses to the reduction of dependency

The essence of dependency reduction strategies was to lessen manufacturing errors by using machinery to control or replace the actions of operators. This strategy was based on the assumption that technology was more reliable than the human operator and that dependence could be engineered out of the production system. An example from the line illustrates the use of technology in this way. One station at which I worked involved checking that two of the unit's functions were working within prescribed limits. My job was to locate the unit onto a jig and then press a button which slid the unit into an electronic testing device. The machine performed the appropriate tests and indicated to the operator whether the unit was satisfactory. This automatic calibration machine was a recent introduction. The machine it had replaced relied on the operator's judgment to determine whether the unit was functioning within prescribed limits.

While this type of initiative was eulogised by the production engineer as resolving a problem for Telco, the actual performance of this particular new device caused a range of production difficulties. First, it was rather temperamental. So much so, that Ray, the usual operator at this station, constructed a number of signs which he hung over the machine. The first, said 'machine out of order', the second, 'machine still out of order', and the final one 'for sale, one new Japanese machine. Can be repaired or used for scrap'. When the new machine did break down, the original machine, which remained on the factory floor, was brought back in to commission. Ray's signs above the machine were visual emblems of the sense of frustration with the

malfunctioning of the technology. It was management who were held responsible for introducing what was viewed as unreliable and inappropriate technology, leading Ray and the workgroup to question the competence of Telco's management.

A second difficulty was that the new automatic machine was extremely sensitive to any slight variations outside the prescribed tolerances. This brought an interesting reaction from the supervisor, as my following diary note indicates:

> The automatic testing machine I was on today alarmed, indicating that the unit was outside the tolerance limits. I called Paul (the supervisor) over and he said that the machine was over-sensitive and that the unit was probably OK. He then checked it manually using the original equipment and said that it was on the borderline and so we can pass it.

The acceptance of 'borderline' units and the reversion to the original manual process both acted as examples of the supervisor manipulating official procedures and, as such, were used by operators to legitimise their own circumvention of formal systems. They also underscored two related key messages to operators. The first was that quality and quantity were not always mutually achievable and that the demands to meet output targets could be in tension with quality standards. Second, despite the plethora of quality-checking systems, and when friction occurred between output levels and quality standards, it was quality that was sacrificed, usually through the revision downwards of official standards.

Responses to Monitoring and Surveillance

Monitoring and surveillance permeated all aspects of life on the line. Although, as some of the following examples will illustrate, operators were acutely aware of the omnipresence of surveillance, the monitoring procedures drew little adverse comment from the operators. There were some exceptions to this, one being where the monitoring procedures were felt to be applied unjustly. My diary details one example:

> At the meeting this morning, Paul (the supervisor) went over yesterday's defects, but singled out a particular problem that had occurred with loose screws. He said to Janet that she needed to be particularly careful and to make sure that none got through to the end of the line. Janet was furious afterwards at being singled out and for the faults being counted against her. She said that all she had done was report the faults and that the problem could have happened anywhere up the line.

The focus of Janet's discontent was not the systems themselves, but the way they were applied by the supervisor and chargehand, which she felt to be unfair.

A further adverse comment by operators concerned the way in which monitoring systems were manipulated by management. During one particular day on the line there had been a significant problem with one of the processes which led to the unit 'alarming' when it went through an electronic testing

station, indicating that it was outside the tolerance bands. The response of management was instructive:

> Working on the line today when Pat said "hey - look at this, I know what's going to happen now, they're going to fiddle the tolerances". I saw a couple of engineers and some members of the quality control department conferring by the machine. Production was stopped while they made some adjustments. Pat said "they always do that, if they're having trouble getting things through they always fiddle the tolerances - we won't have any alarms now". Pat's prophecy proved correct - the day passed with no more units rejected by that monitoring process.

During a subsequent interview with the QC manager, I asked about this changing of tolerances. His response was that the machine was initially set to Telco's own tolerances which were more stringent than those applied by the manufacturer, so the tolerances could be relaxed while still meeting manufacturer's requirements. This does, of course, beg the question of why have an internal standard if it is going to be ignored at the whim of management. Also, the reason for this revision of tolerances only became apparent as a result of my interview with the QC manager. No attempt was made to inform the operators what the justification for the change was, either at the time or at the following morning's team meeting. Consequently, operators just viewed this as management 'cheating' the system when it suited themselves.

The circumvention of monitoring and surveillance procedures was not merely the preserve of management. Operators also developed a number of

strategies to evade monitoring and surveillance in order to escape blame for errors or substandard work. Part of the function of every operator was to check for visible quality of the units they received from their colleagues downstream on the line and reject those units they viewed as unsatisfactory, passing them on to the supervisor. Quality, in this context, does not refer to functional quality, but to visible cosmetic quality, which included scratches, blemishes, shading, light levels etc. Thus operators were charged with 'policing' the work of their workmates as well as maintaining the required standard on their own work. A key role in the circumvention of these aspects of monitoring and surveillance was that of the 'final inspector', the end-of-line operator who conducted a visual check on the unit and was supposed to record any defects. However, rather than write down all defects, it was common practice to send units back up to the line to be 'doctored' and then pass them through as right first time. This did not mean that no 'end-of-line' defects were recorded, as a complete nil return would have alerted management suspicions. The 'final inspector' would submit a daily tally which, in their view, was sufficient to allay any management suspicion, but which underrepresented the actual level of defects. This practice was common across all the lines and was carried out with the express intention of protecting members of the team from censure. As Dave, a final inspector on one line, told me: "you don't write everything down - you don't want to get people into trouble".

There is some similarity here between the actions of operators at Telco in looking after the interests of their workmates and Delbridge's experience at

Nippon where operators would pass warnings back up the line if errors were being made. There is also a key difference between the two cases. At Telco defective units were physically passed up and down the line, while at Nippon assistance was limited to verbal support between operators. One explanation of the difference between the two cases is the size and portability of the product. Nippon's product, TVs could not be moved up and down the line; by contrast Telco's units were sufficiently small and light to be taken off the line at any point and so could be sent back for unofficial rectification. This distinction has been raised because the issues of size and portability of products as explanatory factors in influencing the nature of resistance are largely absent in accounts of workplace relations.

A further example of the manipulation of official operating procedures at Telco by the 'final' inspector concerned the 'doctoring' of the QC sample. The first four units of each batch were supposed to be set aside for QC to inspect. My experience of packing on the end of the line gave me an insight into how this procedure operated in practice:

> As I started to pack the units Sharon instructed me to put some of the units in the QC box but to allocate others for normal dispatch - it was not until twelve units had come down the line that we finally had four for QC. When I asked what was wrong with the eight consigned direct to the customer, Sharon replied "They're fucking shit". I later learned that what Sharon meant was that they had some minor cosmetic defect which might not have escaped the 'eagle-eyed' QC representative but

> which were not likely to be spotted by Telco's customer or the final consumer.

Experience also soon taught me that collective support to look after each other's interests was not limited to the 'final' inspector; it was a general feature of the line. If cosmetic defects were spotted before they reached the 'end-of-line' inspection point, they were usually sent back up the line for rectification without the supervisor being notified. Operators would also support each other by passing warnings up the line if there was a particular need for caution. My diary indicate one such instance:

> Pat came up to me this morning and told me to make sure that I had the right work standard[7] on display, as QC was stalking the line. Sure enough a member of the QC department appeared later and checked that the work standard I was displaying tallied with the model currently being produced, and that I was following the correct operating procedure.

In addition to working as a group to protect each other's interests, operators also developed individual methods of evading monitoring and surveillance. Two examples from the sub-assembly areas illustrate this. Sub-assembly usually involves placing a number of components on a jig and then operating the machine to clamp the components into a complete sub-

[7] A work standard is a detailed description of how to undertake a particular job, for each of the models on the line. It includes a diagram, operator's instructions and key quality points to consider. The operator is supposed to have the appropriate work standard above their work station at all times.

assembly. Although not a difficult task, it was one that demanded dexterity, an operation at which I was not always successful. If the components were wrongly positioned on the jig, then the sub-assembly would emerge as unusable and some of the components would have to be declared as scrap. On one line Stuart, my neighbouring operator, saw me going to record one component as scrap after I had mislocated a component on the jig. He advised me not to declare it as scrap, as this would mean a fault recorded against myself, but to mark it as a defective incoming part; in that way the supplier would be held responsible and not me. It was, he said, a trick he used whenever he thought he could get away with it. A further covert way of avoiding having to record faulty work against myself was explained by Anne, an operator on a different line. She told me to "put any mistakes you make in your pocket, don't tell anyone about it and take them home with you". This apparently was a method that she pursued particularly in the early days when she was learning the job.

What quickly became apparent was that many of the operators' strategies to evade monitoring and surveillance were often performed with at least the tacit approval of the supervisor. When I asked Sharon, an end-of-line inspector, about the possibility of being reprimanded by the supervisor for not recording all defects, her response was that this would not be a problem as the supervisors were well aware of this practice. This view was confirmed by one supervisor who told me that she turned a 'blind eye' to units being sent back up the line to be rectified, rather than being recorded as defective. She argued "if you make them correct their own mistakes they don't make as

many". This practice also had advantages for the supervisors. As they were responsible for official rectification work, it relieved them of this task. Also, as supervisors were held accountable for line performance by management, the under-recording of the number of defects meant they were less likely to experience managerial censure.

While operators and supervisors would sometimes collaborate to circumvent monitoring procedures, operators were also aware that the traceability process meant that any unit leaving the factory with an obvious defect might bring a reprimand in the future. This knowledge sometimes brought the operators into conflict with the supervisor. On some occasions when operators alerted the supervisor to a quality problem they would be instructed by the supervisor to 'pass' the unit, even though they, the operator, felt it was sub-standard. In these cases, to protect themselves from any future comeback should the unit be rejected at a later date by the customer, the operator would insist that the supervisor sign the unit, thus indicating that responsibility for passing it lay with the supervisor. When faced with this demand for a signature, supervisors would often reconsider their initial judgment and consign the unit for rectification.

What also emerged from the actions of both workers and supervisors was that while support could be offered to some operators, it could quite easily be denied to others. In the case of Dave, a line worker, this lack of support was very obvious. Dave was not liked either by his co-workers or by the supervisory team. He was viewed as lewd and foul mouthed (a difficult achievement given the industrial language and general banter that

characterised the lines), lazy and unreliable (taking time off for no good reason). This led to the traditional 'protection' being withdrawn from him. My diary entry notes a particular example:

> Sharon (the end of line inspector) complained to the chargehand today about the number of units that had been coming down with dust in the visors. This was a clear dig at Dave who had been on the air-blowing machine today. Darren, the chargehand said that he wanted all the defects recorded on the sheet. As usual, Sharon had not been recording the defects, so she made up a high number for 'dust in visors' and entered it on the sheet. At morning assembly the next day Darren said that the number of defects to 'self' had been too high, especially with dust problems and told Dave to be more careful. Darren commented that "it's no good trying to hide faults by not recording them because the rework required is reflected in the number of units produced, so if targets have not been met then, unless there has been a line breakdown, management know it must be due to defects." This was clearly meant for Dave's ears as a signal that he was not going to get support from the line or the supervisors.

The above discussion has illustrated that operators' daily actions at the point of production were shaped, at least in part, by the presence of monitoring and surveillance procedures. These actions took a range of concrete forms and had a number of purposes including evading surveillance, monitoring standards and 'policing' colleagues. It also involved operators in

relationships with peers and supervisors that were both supportive and confrontational.

Responses to Pacing

The pace of the line was dictated by the 85% 'efficiency quotient' and the balancing of the line around standard operating procedures. The 85% 'efficiency quotient' is significantly less than work pace expected at Mazda's American plant. Fucini and Fucini comment of Mazda:

> Workers at Flat Rock were actively engaged in their work for 57 seconds every minute compared to the 45 second-a-minute average pace of the Big Three worker (Fucini and Fucini 1990:148).

That is not to argue that the pace of work was pedestrian; the 85% 'efficiency quotient' yields a 51 second-a-minute pace, greater than the American vehicle manufacturers cited by Fucini and Fucini. It does however illustrate that Telco did not expect the extremes of effort associated with some Japanese transplants.

Among Telco's operators there were mixed feelings concerning the pace of the line. While no one ventured the opinion that the pace of work was slack, views did vary from "reasonable and manageable", to "difficult to keep up". One explanation of the different views is that, despite attempts to balance the line, the time taken to complete tasks varied between work stations and also within work stations due to the particular requirements of different models. The impact of a change of model on levels of effort can be illustrated by my experience on the 'visor' work- station. This involved inspecting a

plastic visor for scratches and then inserting it into the main body of the unit. My diary records my progress:

> On visors today. Initially I coped quite well: inspect the visor, add the plastic 'housing', locate the plastic clips into the main body of the unit and press them together until they click into place. By first bell I had it sorted, working at a steady pace and chatting with people around me. Then disaster struck in the form of a model change. For the new model the visor edges and lugs had to be glued before they were located onto the main body of the unit, adding several new movements and seconds to the task. Despite my frantic best efforts, I failed to cope and was replaced by Mandy, an experienced operator (I was sent packing - literally). Talking to Mandy later she said that she had to work at full speed to keep up with some models but that others were much easier.

What emerges at Telco is not the unremittingly harsh pace reported in some Japanese transplants (Graham 1995; Fucini 1990), but a slightly inconsistent pace depending on task and model.

What was quickly apparent at Telco was that the intensity of work was, to some extent, controllable by the operators themselves. This was often achieved by shortcutting the formal operating procedures laid down in the work standard. For example, my task on one line was to undertake three tests on the product, a procedure which I followed religiously until my predecessor at the station told me I had no need to bother with the third test, as this was replicated further down the line. Interestingly, when I asked about the

potential consequences of doing this, he assured me that "there shouldn't be any problems; Mark (the supervisor) knows that we do it."

On some work-stations, workers used the ability to 'shave' a few seconds off standard job times to build up buffer stock, as the following diary entry indicates:

> Mandy, a worker on sub-assembly, said that she could cope with line speed comfortably - she does not have to go too fast because she misses out one of the test operations. She usually manages to build a 'kitty' to get ahead of the line, but she is careful not to get too far ahead or the supervisor will find her other work to do.

As outlined earlier, in sub-assembly units were transferred between work-stations in special protective pallets consisting of 24 units. Officially there was supposed to be no more than a single pallet of stock between work-stations, but Mandy would work ahead to make up an extra pallet and kept this underneath her workbench. Mandy's ability to translate any extra units into a kitty in order to give her some control over her work effort is particularly interesting as it is a feature of production which has traditionally been associated with assembly work, but which, it has been claimed has been eliminated by just-in time production (Delbridge et al.1992). At Telco, although the 'banking' of work was officially frowned upon, it was a regular feature of the sub-assembly stations.

While in the example cited above Mandy was careful not to get too far ahead for fear of being allocated additional duties by the supervisor, the manufacturing of a 'kitty' was both recognised and encouraged by the

supervisor. Supervisors knew about the banking of stock through their physical supervision of the line. They encouraged this because it facilitated the daily achievement of production targets. 'Banked' units were items that had been produced and counted towards the daily production tally; they represented a valuable resource in a production process which, as we will see in the next chapter, was beset by problematic technology and variable quality of supplies.

The ability of operators to gain some measure of control over their work effort through circumventing official operating standards was not limited to sub-assembly. This is illustrated by a description of the way the checking and final inspection operations were organised on one line. The area was staffed by Kate, Lorraine and Paula, with myself making up the fourth member of the group for a three-week period. Our task was to perform a series of checks on the finished units as they came to the end of the line. First, they would be put on a machine for a specified time which simulated hot conditions, to ensure they responded appropriately. Then they went to the 'lumo' (illumination) booth, where an electronic functional test was performed. Finally, they went to inspection and packing. The women had worked together on this section for several years and familiarity with the operations meant that they had found a number of shortcuts which they exploited. For example, with the heating process, rather than leave the units on the machines for the specified length of time demanded by the work standard, when the unit had indicated that it had responded appropriately to the temperature, it was removed and replaced with another, irrespective of whether the full time cycle had been completed.

The strategies detailed above were used to shave seconds off formal procedures. The use of the 'lumo' booth allowed workers to take clandestine advantage of their ability to manufacture unofficial rest pauses. The 'lumo' booth is completely enclosed with a full-length black curtain, thus preventing anyone from seeing in. Only one operator was supposed to work in the 'lumo' booth but it provided an ideal meeting place for the workers in this group to chat, knowing that even if the work became backed up they could clear the backlog quickly by shortcutting official operating procedures. The 'lumo' booth also provided a refuge for workers from other workstations and lines to have a chat and take a pause if they managed to make time during their operations. In addition, with company rules forbidding eating on the shop floor, the 'lumo' offered a haven for storing and consuming food. For example, Paula, one of the three regulars who worked the 'end-of-line' section, had difficulty in getting up in the morning and consequently did not have time for breakfast without being late for work. Her solution was to bring her breakfast (two slices of toast and a drink), daily onto to the shopfloor in her bag, and spend time in the 'lumo' eating it. Her work was either covered by her colleagues or backed up and then cleared later.

This discussion of operator responses to pacing has argued that there was no one single uniform workpace at Telco. It has also illustrated that operators devised a series of methods, usually related to the circumvention of official operating procedures, to gain some control over the intensity of work. Finally, it has identified the supervisor as a conspiritor in at least some of these unofficial practices.

Responses to Time control

Operator action to manipulate workplace regulations also applied to time control. One example of this is illustrated through the issue of toilet breaks. Toilet breaks acted often as a rest and a break from the line rather than a physical need. As Collinson observes in his study of Components Division:

> The toilets constituted a free space in which time could be appropriated and surveillance could be escaped. (1994:35).

At Telco toilet breaks officially had to be sanctioned by the supervisor. However, rather than seek permission operators would simply leave the line, merely informing their fellow workers. Occasionally, the supervisor would try to control this absence from the line, an action that could be firmly rebutted by the operator. For example, one lunch-time Anne described an altercation with a supervisor which had taken place earlier that day:

> I was going to the loo for a break and I could see Mark (the supervisor) looking at me. He shouted to me 'where are you off to', so I turned round to him and said 'I'm going to change my tampon - have you got a problem with that?". He went bright red - he won't ask me that again in a hurry - what I told him wasn't true, but it's taught him a lesson.

A contest also developed over 'cleaning-up' time. Officially, the last five minutes of the shift was to be devoted to general housekeeping and TPM, but

this was widely ignored, with operators using the time to chat or find reasons to go and visit their workmates who happened to be stationed nearer the exits. This was subject however to periodic attempts at clamp down. Supervisors would sometimes reprimand workers for 'hanging around' during 'cleaning-up' time and order them back to their workstations to "go and do some tidying". The 'misuse' of 'cleaning-up' time also provoked a reaction from senior management. At one team meeting, a memo from the MD was circulated rebuking workers for their misuse of 'cleaning-up' time. The memo stated:

> It is not acceptable to stand around waiting for the bell, you must work up to 4.30 pm.....I have asked my supervisors to ensure that the above is adhered to, and to bring to my attention any specific areas or individual not complying with the company's policy.

That evening the MD 'patrolled' the floor during cleaning-up time and the operators all found various aspects of housekeeping to occupy themselves. However, when, over time, the MD's patrols became less frequent, the operators returned to their previous practice. The use of 'cleaning-up' time drifted into its original pattern of relaxed chatting, punctuated by occasional reprimands from the supervisor.

A further issue related to 'cleaning-up' time concerned total preventative maintenance (TPM). At one of the training meetings I attended, TPM was introduced to the operators. The trainer explained that in the near future operators' duties would be extended to include TPM, involving them in the routine maintenance of their machinery. A question raised by operators was when they were to undertake TPM, as it was an additional duty which

meant that line targets might not be met. One answer from the trainer was that 'cleaning-up' time could be used. This 'solution' seemed to be adopted by management, as a subsequent memorandum from the senior production manager concerning 'cleaning -up' time, cited TPM as one of the operators' duties during this last five minutes of the working day.

Despite the initial misgivings of the operators that TPM would put them under pressure and involve them in work during 'cleaning-up' time, these fears did not materialise. Several days after the line meeting, maintenance staff came round to each machine showing the operators the TPM requirements. The reaction of the operators was generally positive, with comments such as "it's only what I do now, plus a little bit of oiling. I can do that when I get a spare minute". It became general practice amongst operators to fit TPM into pauses during the working day; TPM duties were rarely performed during the allocated 'cleaning-up' time. This remained five minutes for the operators to relax prior to going home.

The actions of workers in challenging management regulations over toilet breaks and 'cleaning-up' time stand in contrast to operator compliance with the controls designed to monitor timekeeping. I noted only three occasions when operators arrived late for morning assembly, and on each of these occasions the individual concerned was reprimanded by the team leader for poor timekeeping. The time structures imposed on breaks and lunchtimes by bell-to-bell working were also broadly observed. Workers who were in the canteen when the bell sounded would return to the work-station promptly, and not try to 'pinch' a few minutes extra free time. This may be due

in part to supervisors taking their breaks with the workgroup, which acted as a physical reminder of timekeeping.

In summary, while operators had some success in manipulating working time to their advantage, they were not able to exert any influence over controls which structured their hours of attendance on the factory floor. Also, it needs to be noted that attempts to manipulate working time brought operators into conflict with supervisors; this is in contrast with many of the practices involved in circumventing operating procedures discussed earlier, where supervisors were active accomplices in rule breaking. The reasons why supervisors should support operator rule-breaking in some instances yet try to enforce the application of rules on other occasions will be discussed in the following chapter on supervisory networks.

Responses to Personal Control

It was argued in chapter four that the operation of personnel policies led to operators voicing concern over the way they were treated at Telco. The personal control embodied in the adversarial management style of Hollins served as another indicator to operators of the lack of respect and demeaning treatment that they received. For example, the occasion that Hollins reprimanded a work team for not achieving daily targets brought a variety of negative reactions, as my diary record indicates:

> Anne "it's just not fair - blaming us for something we have no control over"

Mandy "it's just like being back at bloody school, being told off like that - in fact its worse than bloody school"

Iris "I had to try hard not to laugh but he made me think of a rottweiler. I thought he was going to start slavering at the jaws at any moment"

The operators were powerless to combat Hollins' autocratic style. Any avenue of complaint which they may have used had been blocked off by the atrophying of the company council. The operators' feelings merely simmered away, creating an atmosphere of offence and resentment.

Some of the workers drew a clear link between the way they were treated, both generally and by Hollins specifically, and the gender composition of the shopfloor. One lunchtime conversation illustrates this:

> At lunchtime today Iris said to me "do you know why you're the only man here our age (over 30)." I asked her what the reason was. Her view was that mature men wouldn't stand the way they were treated at Telco. She said "men who have been to work in other places would come here and they would just tell management to piss off if they treated them the way they treat us. Hollins would have been decked by now, no problem - someone would have put their fist in his face". Iris's comments brought general agreement from the other women workers at the table.

While it is not possible to judge the accuracy of Iris's prediction, it does show that some operators felt a double grievance against management in that they were being poorly treated both as workers and also as women. This was the only time during my placement that I heard the female workers make direct

comments concerning the way they felt that their gender influenced the conduct of shopfloor relations.

What is also interesting about the style of Hollins is that it was known and disapproved of by the personnel department. During an interview after my placement, I raised the issue of adversarial management with the personnel manager:

GP I was surprised, on the line, not so much with the supervisors but higher up, how adversarial some of the attitudes seemed to be. One line got an immense bollocking...

DP Was that off Ian Hollins?

GP Yeah, yeah, it seemed to be like an account of working for Ford in the 1960's - it almost belonged to that era.

DP Do you know Ian's gone?

GP No, where's he gone?

DP He's gone to Ford. Ian was a pretty good manager but one of the things that caused us endless frustration was his attitude in his dealings with operators. He didn't treat them well and he was adversarial; he was adversarial in his dealings with everybody, not just operators. He'd come up into our department and act bolshi and make demands and be uncooperative and aggressive, and that was Ian. I suppose he could shout at operators even more that he could shout to other people because they can't shout back at all. Other people can. But I wouldn't be surprised if you said that you experienced similar

behaviour from other people. Perhaps not so extreme; people getting shouted at. I know some supervisors talk to people in an adversarial manner. Sometimes they have to tell people off, there's no escaping it, that's part of their job - they have to control people. What we're trying to do as part of the supervisors' development programme is teach them how to do it constructively. Don't swear, don't get personal, don't do it in public, don't shout. A lot of them do that because that's their natural style and if somebody does something wrong, they get angry and they lose their temper. They get frustrated and they handle it whilst they're angry and they're frustrated instead of calming down and doing it later.

GP It's just an observation really...

DP I know from sessions from when we do the training that a lot of operators feel like they're not treated with respect and that's a bad thing.

In addition to adding support to workers' claims concerning the way they were treated, the conversation also illustrates the lack of power of the personnel department over managers. Whilst supervisors' attitudes and behaviours could be challenged through internal training, seemingly the personnel department could do nothing to resolve the problems posed by an 'unreconstructed' manager such as Hollins, apart from wait for him to leave.

Also, what is somewhat ironic about the personnel manager's views is that he associated inappropriate treatment of operators solely with production

supervisors and managers. However, as has been discussed in chapter four, the (mis)application of personnel policies by the personnel department was in itself a source of significant grievance among operators. For many operators the autocratic attitude stemming from personal control was merely confirmation of the lack of respect and fairness with which they were treated by the company in general.

Having detailed and discussed employee responses to control systems this chapter now moves on to analyse these responses more fully. It begins by examining employee actions in terms of resistance and compliance. These two themes have been selected as they represent patterns of employee behaviour which occur in response to managerial control systems outlined above.

Analysing Operator Responses: Resistance and Compliance

Workplace resistance takes a range of forms and is given a variety of meanings (Hodson 1996). This point is significant as it recognises that resistance is much wider than organised conflict and includes:

> covert and subtle forms like the restriction of output and rule violations, or more illicit subterranean forms like sabotage and theft (Gottfried 1994:107).

This type of worker action has been a feature of a number of studies, with various terms having been coined such as, 'making out' (Burawoy 1979), 'everyday' resistance (Gottfried 1994) and 'sabotage' (Taylor and Walton 1971), to indicate specific forms of worker exploits. The most appropriate term

for analysing the informal employee resistance at Telco is 'fiddles'. 'Fiddles' is appropriate as the term denotes those shopfloor practices which involve workers using their accumulated experience and tacit knowledge of the production process to adjust or circumvent workplace rules and operating procedures (Edwards 1988; Lupton 1963). It is this description of fiddles that is used here. A categorisation of fiddles at Telco is provided in figure five.

Figure five classifies the various fiddles employed by operators in response to managerial control systems, analysing them along two dimensions.

Figure 5

Dimensions of Worker Fiddles

	Evading surveillance	Making time
Collective	'Doctoring' quality control sample. Passing work back up the line for rectification. Not recording all rejects. Quality Control warning	Circumventing operating procedures.
Individual	Hiding reject work. Allocating faults to incoming stock.	Ignoring 'cleaning-up' time. Circumventing operating procedures. Hiding buffer stocks. Leaving the line.

Source: Based on Webb and Palmer (1998:616).

First, they can be grouped according to whether they were pursued by individual action or by employees acting collectively. 'Collective action'

denotes that the beneficiary of the fiddle was dependent upon the active complicity of another operator. Second, they can be classified according to one of two purposes: evading surveillance and making time. 'Evading surveillance' involved workers in action which was essentially defensive, the aim being to avoid detection and blame for any sub-standard work. 'Making time' represented action to gain pockets of space away from the drudgery and physical demands that were a consequence of the routine and continuous nature of work at Telco.

The traceability system, the daily tallying and public display of faults, the checks during and at the end of the production process, and the 'independent' gaze of quality control, all serve as constant reminders to operators of Telco's ability to reprimand errant performers. Despite these widespread controls, operators remained active agents in opposing control strategies and retained an ability to engage in actions to exert some measure of control over their life on the shopfloor. What emerges clearly from the data is that neither the high-commitment nor compliant-worker models, discussed in chapter one, are appropriate portrayals of employee responses described above; resistance remained a feature of the factory floor at Telco.

It is, however, important not to view worker responses solely in terms of resistance, as their actions also involved an element of compliance. 'Compliance' indicates the ways in which managerial control was accepted by operators. Compliance took two main forms. First, it was apparent in what workers did not do, thereby allowing managerial decisions to go unchallenged. There was, for example, no concerted effort to resist the bell-

to-bell working or the daily recording of faults on the white boards. Similarly, management 'initiatives' that involved an extension of tasks, such as the imposition of TPM, were not directly challenged. The introduction of TPM is particularly interesting as it clearly illustrates the weakness of workers' position once they are deprived of any independent representation through a trade union. TPM was not subject to any discussion, but was unilaterally imposed by management; operators were restricted to actions aimed at ameliorating its impact. That is not to argue that workers are powerless, but that the lack of a trade union tends to reduce opportunities for an organised collective voice.

Compliance also took a more active form, with workers 'policing' the line to ensure acquiescence with organisational rules. Compliance occurred when workers refused to engage in fiddles, thereby preventing other members of the team from manipulating standard operating procedures. The non-support of Dave because of his slipshod work, and the insistence that supervisors initial 'dubious' units, both illustrate the boundaries imposed on fiddles by the workforce. Although in these two examples the 'policing' of fiddles was prompted by different motives, in both cases the outcome was the same, that workers ensured operating procedures were correctly applied. More generally, this selective application of fiddles provides an illustration of the manner in which control and resistance can be linked in one action (Collinson 1994).

In summary, the response of operators to the control systems at Telco was not unidimensional. Some actions represented an attempt to manipulate

and subvert these control systems. On other occasions not only were control measures accepted, but were also 'policed' by operators. This supports accounts of workplace behaviour that suggest resistance at work is usually interwoven with compliance (Collinson 1994; Gottfried 1994).

Having discussed employee behaviour in terms of resistance and compliance, the chapter now moves on to a second stage of analysis, to consider employee action in terms of the study's three social dimensions, knowledge, reciprocity and identity.

Knowledge

Workers used their intimate knowledge of the production process both to make time and evade surveillance. Individual and collective methods of making time were often achieved by 'cutting corners' and not following standard operating procedures. They were able to achieve this, in part, because they had accumulated a reservoir of knowledge as to which standard operations could be safely circumvented. For example, in the situation where the units were removed from the heating process before the full time-cycle had been completed, accumulated knowledge told the operators that once a unit had reached a particular 'reading' then it was of an appropriate standard.

Knowledge was not merely accumulated, it was also shared within the workgroup. This sharing of knowledge allowed newcomers such as myself to be initiated into the techniques of making time, by being informed which operating procedures could be circumvented, and also into ways of evading

surveillance through the recording of errors to 'others' and not 'self' and the advice to 'take your mistakes home'.

Workers' actions were also shaped by their knowledge of managerial (mal-)practice. Experience taught the workers that managers would manipulate quality procedures when it suited themselves, as in the case of altering tolerances in order to ensure that units were not rejected and output was achieved. This knowledge provided workers with a legitimation for their own fiddles, arguing that if management could break the rules, so could they. The nature of the rules broken by management was also significant, because, in the case of altering tolerances, they indicated that management's priority was quantity rather than quality. This acted as a justification for workers to 'pass' units of marginal quality.

A further connection between worker knowledge and managerial action existed through the process of introducing technology and technical innovation to reduce operator dependency. This should have prevented workers from using some of the detailed knowledge they had acquired over operating procedures. However, in practice, this was not necessarily the outcome. Innovative technology caused problems through its unreliability and, consequently, management was forced to resort to the original technology which relied more extensively upon operator input and knowledge. It is not being argued here that all technical innovation was subject to malfunction, but neither was it problem-free, which meant that managerial initiatives to reduce dependency upon worker knowledge were not always successful.

Reciprocity

Reciprocity was a key feature of interaction between operators within the workgroup. As discussed above, workers shared knowledge in order to make time. They also co-operated in a number of ways to evade surveillance, ranging from warning colleagues of 'spot' inspections by quality control to the systematic non-recording of defects. This philosophy of looking after the interests of your co-worker was a central feature of all the lines on which I worked. However, this mutual support was not extended to all members of the workgroup. In the case of Dave, his slapdash attitude to his work, unreliability and unacceptable social behaviour led to a situation where his co-workers deliberately identified his mistakes to the supervisor so that he would be censured. Some accounts of Japanese transplants have emphasised peer surveillance and monitoring as the outcome of teamworking (Garrahan and Stewart 1992; Sewell and Wilkinson 1992a, 1992b). The data from Telco suggest that although peer surveillance does exist in some instances, this is an exceptional, rather than a defining feature of workgroup relations. A much more common occurrence was reciprocal support to evade managerial control systems. Peer 'policing' is not, therefore, the automatic outcome of high-surveillance regimes, rather, these regimes can generate collective worker action to deny management the 'benefits' of their surveillance systems.

A further key reciprocal relationship existed between workers and supervisors. Operators' circumvention of operating procedures was often conducted with the tacit approval, or in some cases, under the instruction of

the supervisor. Operators participated in these reciprocal agreements because they served their own interests; they were a significant factor in facilitating the operator's capacity to evade surveillance and make time.[8] Where operators thought that such co-operation was disadvantageous, for example if they were requested to 'pass' units which they did not feel met required quality standards, then they would withdraw co-operation by taking steps to ensure that the source of the 'malpractice' was attributed to the supervisor.

On other occasions reciprocity was challenged as workers' pursuit of fiddles brought them into conflict with the supervisor. This was particularly apparent in workers' attempts to make time by leaving the line and by 'skiving' during 'cleaning up time'. Supervisors' attempts to enforce corporate regulations were resisted by workers both individually and collectively. What appears to have occurred in these cases is that over time informal workplace procedure had replaced official regulation and this unofficial custom and practice had ossified to represent, at least in the workers' view, a practice that was non-negotiable. While this might seem a very small 'victory' it does indicate that workers can still exert some informal influence over their conditions of employment even in a situation where they are denied independent representation and within a regime of surveillance.

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[8] Why supervisors should conspire with operators in this way will be discussed in the next chapter, supervisory networks.

Identity

Chapter four argued that the operation of personnel policies had generated an anti-company ethos amongst many of the workers. The operation of managerial control strategies served to underpin this ethos. In some instances worker discontent was aimed at the operation of monitoring and surveillance systems which, they argued, apportioned responsibility to the wrong person. More generally, workers resented the autocratic manner in which personal control was exercised by the production manager; the effect of personal control was to re-affirm to many operators the feeling that they were not treated appropriately by the company.

More broadly, the issue of identity is significant not only as a classification of worker responses, but also in making sense of these responses theoretically. At issue here is whether worker actions at Telco should be classified as representing resistance, or whether it would be more accurate to characterise these responses as consent.

It has been suggested that consent occurs when employee actions benefit both workers and management (Noon and Blyton 1997). Consider, for example, Burawoy's (1979) analysis of the generation of consent, which he develops through an ethnographic study of the shopfloor in an engineering company. Burawoy found workers engaged in a range of fiddles and shortcuts to 'make out' i.e. achieve production targets. He argues that this process of 'making out' locks workers into the production of consent on the shopfloor. Not only were management often the co-beneficiaries of the shortcuts and angles

that workers used, with fiddles only being tolerated if they facilitated the achievement of output, more significantly for Burawoy, once employees engage in 'making out' they become incorporated into accepting the conditions of their own exploitation. He comments that 'the very activity of playing a game generates consent with respect to its rules' (1979:81).

If this interpretation of consent is accepted then there is a prima facia case for viewing worker fiddles at Telco as consent rather than resistance. Employee action in engaging in fiddles served not only the operators' interests, but also those of management by ensuring the achievement of production targets. This is illustrated for example, through the actions of the end-of-line inspector in 'passing' marginal units which, in her experience, would meet the customer's requirements but not the standards of the internal QC department. Moreover, the circumvention of workplace rules and operating procedures was often based on workers' tacit acceptance of managerial prerogative, rather than any direct challenge to managerial authority. For example, through manipulating the way TPM operated on the shopfloor, operators accepted the right of management to intensify the working day.

However, in the case of fiddles at Telco this interpretation of worker action as consent is not appropriate for a number of reasons. Firstly, for Burawoy, consent is characterised by the replacement of vertical conflict with lateral conflict. While lateral conflict was not absent at Telco, peer relations were mainly characterised by co-operation aimed at protecting each other's interests against the surveillance and monitoring systems devised by

management. Secondly, classifications of worker action depend upon the definition used. It has been argued that worker rule-breaking can be defined as resistance when it allows workers some measure of control over their own conditions of employment, irrespective of whether it offers a challenge to capital (Jermier et al. 1992). The fiddles at Telco certainly correspond to this definition as their purpose and outcome was specifically to increase worker control over the effort they expended and the extent of surveillance to which they were subjected.

A final reason for suggesting that fiddles represent resistance rather than consent is through consideration of the meanings that workers themselves attached to their actions. With reference to consent and resistance, this draws an important distinction between actions and their consequences on the one hand, and the intended meaning given to the actions by the people performing them on the other hand (Knights and Collinson 1985; Stephenson 1996). This issue of meanings attached to actions brings the debate back to identity and to the resentment which punctuated operators' accounts of shopfloor life at Telco. It has been argued that this resentment represented the feeling of many workers towards the treatment they received on the shopfloor. This level of perceived injustice sits uneasily with a characterisation of consent, as it suggests that the workers' view of the labour process is one that is rooted firmly in a basic conflict of interest, where capital is represented as unjust and exploitative. Workers' own views of fiddles certainly alluded to this conflict of interest, as they saw them as a way of pursuing their own interests by resisting official working

procedures. As the 'end-of-line' operator observed with reference to the non-recording of faults "you don't write everything down – you don't want to get people into trouble". A similar sentiment was expressed by a group of workers whom I met during a visit to the factory that I made sometime after my work placement. They asked me what I thought I had learned during my time on the line. In response I mumbled something fairly inconsequential and then asked them what they thought they had taught me; their answer was "we taught you how to cheat". The meaning that workers themselves attached to their action seems consistent with the classification of fiddles as resistance rather than consent.

Something old, something new

One interesting feature of the above account of workplace relations at Telco is the degree of similarity with workplace studies that were undertaken before the impact of Japanisation. This can be illustrated with reference to one particular piece of research, Cavendish's study of UMEC (1982). UMEC provides a valuable point of reference because like Telco it was a first-tier supplier to the motor manufacturing industry, and also the research data were gathered through participant observation, generating a rich source of comparative material.

Table five lists the features of the labour process at UMEC that have a strong similarity with the experiences outlined at Telco. In both cases workers engaged in collective resistance to make time and evade surveillance, workgroup support was withdrawn from perceived 'skivers', the shopfloor was

characterised by an uneven pace of work and inconsistent quality of parts and management made little attempt to use the tacit skills of the operators.

Table 5

Features of the labour process at UMEC

Workers taught each other shortcuts.
Workers would correct the defects of other operators rather than having units marked as rejects at the end of the line.
Workers generally supported each other although this support was not extended to operators who were disliked or perceived as lazy.
Some jobs were much harder than others to complete in the standard times.
There were problems with poor quality parts and with temperamental machinery.
Managers and supervisors tried to ensure operators worked right up to 'clocking off' time – a policy that was resisted by the operators.
Workers' views were not taken into account when lines were 'balanced' or jobs were designed

This raises the question what is new in the 'new' workplace. Two major differences can be identified between UMEC and Telco, namely, the extent of supervision and JIT supply. Turning first to differences in supervision, while both factories were subject to personal control workers at Telco experienced more intensive and extensive supervision. Thus, morning team briefings to determine attendance, bell-to-bell working, electronic surveillance systems, daily public records of defect rates and the extensive array of production data, that were all features of the labour process at Telco were absent from UMEC.

This suggests that one important feature of Japanese transplants is a potential for increased managerial hegemony. With reference to JIT supply, in the case of Telco the need to respond to customer's JIT requirements, both in terms of delivery and quality, in the context of technical and supply problems, exerted a pressure on the shopfloor that was absent at UMEC. Whilst accepting that the influence of product markets on the labour process has long been recognised, the advent of JIT seems to create more extensive pressure on capital and bring to bear new influences upon the point of production. This point will be developed in the following chapters which discuss the significance of JIT on workplace relations at Telco.

There are of course shortcomings in using two companies as proxies for different epochs or paradigms, and no claims can be made concerning representiveness. But, despite the limits to this analysis, it does provide a potentially valuable method of identifying the extent of new developments. The comparison of Telco and UMEC suggests that notwithstanding some key differences, the labour process in the two companies can be characterised as much by continuity as by change. The advent of Japanese transplants has not necessarily changed the basic contours of workplace relations; management still face many of the traditional 'problems' associated with securing production, problems which have arguably been exacerbated by JIT. Similarly, although new 'solutions' have evolved in an attempt to increase managerial hegemony, employees have continued to challenge management attempts to extend their control at the point of production. What Telco seems to represent

is a continuation of traditional shopfloor industrial relations issues and conflicts within new conditions both at and beyond the point of production.

Summary

This chapter has sought to identify and explain the shopfloor behaviour of the workgroup at Telco. It portrays a picture which is very different from accounts that suggest that Japanese transplants are characterised either by a mutuality of interests or by the demise of worker resistance. The data presented here suggest that worker action represents a mixture of compliance and resistance. These responses were embedded in and arose out of the workers' experience of managerial control systems, as it was these control systems that shaped worker action.

The workgroup network at Telco formed the basis for resistance through the manner in which knowledge was acquired and shared. Operators used their intimate knowledge of the production system to devise fiddles, and passed this knowledge on to their workmates. Worker knowledge of managerial (mal)practice was one justification for the pursuit of fiddles. Reciprocal agreements, within the workgroup and between the workgroup and the supervisor, also played a significant factor in facilitating worker fiddles. Workers entered into reciprocal arrangements when they coincided with their interests. They also eschewed or withdrew reciprocity in instances where it could disadvantage them. In this way reciprocal agreements drew boundaries around fiddles, delineating the extent to which workers were willing to circumvent procedures and offer support.

The actions and motives of the workgroup were influenced by supervisory and personnel networks. Reciprocal understandings with supervisors were a key factor in helping workers to effect fiddles. The failure of the personnel department to ensure that workers were treated in an appropriate manner, especially by the production manager, compounded the construction of an identity that was characterised by an anti-company ethos. This hostility towards management is one reason that worker action can be more correctly categorised as resistance rather than consent.

More generally, there are a number of issues that have arisen in this chapter which either seem at variance with or are absent from other accounts of transplants. One of these concerns the intensification of work. While the data from Telco support the conclusion that Japanese transplants squeeze more minutes out of the working day through strict attention to timekeeping (Danford 1998b), it does not corroborate accounts which suggest an incessantly frenzied pace of work. The pace of work was not slack but neither was it unremittingly harsh for all workers, rather it varied between work stations and models. This is a very different view of life on the line from the accounts which suggest a continuously fast pace, sometimes with workers chasing down the line to keep up with their allocated tasks (Fucini and Fucini 1990). A further issue relates to the significance of personal control. At Telco, while control was embodied in the technology, in workplace rules and in the operating procedures, personal control remained a powerful force in workplace discipline and in underpinning worker attitudes. Indeed, it was argued that the data emanating from the mechanisms of surveillance

supported personal control. Nothwistanding occasional references to the role of production managers and supervisors in maintaining workplace discipline (Delbridge 1998; Graham 1995), accounts of personal control are largely absent from studies of Japanese transplants where the emphasis is on control emanating solely from the social and technical organisation of production. This lacuna may be a significant omission.

The continued existence of personal control is just one of a number of factors that point to a need to analyse the labour process in terms of continuity as well as change. Management have certainly not resolved the 'problem' of worker resistance in all cases; the factory floor in Japanese transplants can still represent a 'contested terrain'. Moreover, it is a terrain with very familiar features as the concerns and actions described in this chapter have been long-standing issues in the literature on workplace relations.

Chapter Seven

The Supervisory Network at Telco

This chapter retains the shopfloor as its focus but extends the analysis by concentrating on the role of the supervisor at Telco. There has been a recent growth of academic interest in the role of the supervisor, both within Japanese transplants (Delbridge and Lowe 1997; Morris et al.1998; Morris et al.1999; Sewell and Wilkinson 1993) and in the 'new' workplace more generally (Bonnazi 1998; Delbridge and Lowe 1997; Lowe 1993; Perry and Tranfield 1998). Nothwistanding some accounts that have signalled a declining role for the supervisor as a consequence of the growth of self managed teams and autonomous work groups (Wright and Edwards 1998), the overall tenor of the research suggests that the supervisor is gaining increasing significance. This is a consequence of firstly, the growth of HRM which advocates the devolution of responsibilities to line managers and, secondly, the Japanese model of teamwork which delegates responsibility for quality and productivity down to the level of the work group and makes the team leader accountable for group performance (Buchanan 1994; Morris et al.1999). This enhanced responsibility of the supervisor can be accompanied by an increased monitoring of their performance (Sewell and Wilkinson 1993) and greater pressures upon them to resolve problems stemming from a fragile production process (Roper et al.1997; Taylor et al.1994).

The identification of additional responsibility and accountability raises some key questions, such as how do supervisors cope and what are their relationships with managers and workers? It is these questions which form the basis of this chapter. The chapter begins with a brief outline of the characteristics of the supervisor at Telco, followed by two sections that discuss their key function and the nature of the problems they face. Five coping strategies of the supervisor are then identified, which leads into sections discussing knowledge, reciprocity and identity, in relation to supervisors.

Supervisors: characteristics

At Telco, each of the seven production lines was headed by a supervisor who was assisted by a chargehand. Unless indicated otherwise, all references to the supervisor will relate only to an individual so designated and not to a chargehand. The title of 'supervisor' is used rather than that of 'team leader' as this is the designation applied by the company.

Supervisors at Telco generally shared a number of characteristics. They were all relatively young, with an estimated age range of 25-35. All but one were male, and similarly, only one had been recruited externally, the remaining six having started with the company as operators. This represented a fairly rapid promotion as the company had only been established eight years at the time of the research.

The role of supervisors: Meeting output.

Supervisors at Telco had a wide range of designated responsibilities. Appendix seven shows a list of supervisors' responsibilities produced by Telco's management. In pole position on the list is 'ensuring output targets are met'. It is this role of meeting output that concerns this chapter. There are a number of reasons for concentrating on this particular aspect of the supervisor's role. First, the placing of the requirement to meet output at the top of the list of responsibilities was not some administrative coincidence or accident, rather it represented the priority for the supervisor as determined by management and as experienced by the supervisors themselves. Second, in meeting output, supervisors had to make decisions concerning many of their other designated functions. For example, in meeting output supervisors were often involved in making decisions concerning quality levels. Third, it was the need to meet output that structured much of the supervisors interaction with the workforce.

The significance placed on meeting output is linked to Telco's position in the supply chain. For management, the paramount objective at Telco was ensuring that daily production targets were achieved and that customer orders were met. A company director commented:

> We never miss a delivery - that is the worst thing you can do - miss a delivery. In terms of the way companies operate, first-tier suppliers operate on a different plane because their customers have absolute control. You're not going to be in business if you miss a delivery and

> you stop the track; stop the line and you won't be in business. All our focus is on making sure the customer never stops.

A consequence of this philosophy was that the supervisors, as leaders of the team, were under constant pressure to 'meet output'. Figures were generated daily for each line across a range of production indicators such as operator errors and rejected units, and these were used by management to judge and monitor the performance of supervisors in achieving targets. As one of the supervisors commented:

> They (management) look at the daily reject figures and if there are too many they blame the supervisor, they say it's your (the supervisor's) fault, you're not training them properly.

The accountability of the workgroup therefore extended not only to operators but also to the supervisor.

An indicator of the pressure upon supervisors to meet output targets and of the relationship between operator and supervisor accountability can be seen in the nature of team briefings. Targets formed the critical feature of the supervisor's input to the daily team briefing; the first, and often only, issue discussed at every meeting I attended was whether the line had met its target for the previous day's output. If quotas had not been met the supervisor would then identify what steps were to be taken to ensure the problem was not repeated that day. Monitoring and surveillance systems were in place to make the team accountable for meeting output; the same systems ensured that supervisors were held responsible for ensuring that the team did, in fact,

achieve the targets set. However, as the next section discusses, there were major obstacles confronting the accomplishment of targets.

Meeting output and contingent conditions

Any discussion of the functions of the supervisor needs to take into account not only the priority allocated to particular responsibilities, but significantly, the ease with which these responsibilities can be achieved. Thus, a primary responsibility may involve the supervisor in little use of their time if the conditions contingent for meeting that target are in place and controllable. The significance of contingent conditions in determining supervisory functions is emphasised by Thurley, who comments:

> Certain types of organisation and environment provide numerous contingency problems which demand action by those within the supervisory system. Contingencies might include variations in the production process, shortages of raw materials or component, unpredictable variations in performance by operatives, faults or breakdowns in plant, and so on. *The actions taken by supervisors to deal with contingencies appear to be the most critical parts of their role* Although adequate planning may make it possible to avoid certain types of problem, in reality it is beyond the influence and power of supervisors to affect the causes of many contingencies. Reactions to problems arising out of the production system are thus crucial (1973: 183 original emphasis).

Although this relationship between the responsibilities of the supervisor and production contingencies is nothing new (Beynon 1973), it assumes particular significant in the context of the technical and social organisation associated with Japanisation, given the fragility of the high-dependency production system (Oliver and Wilkinson 1992). JIT and TQM production regimes are especially vulnerable both to external dislocations, such as poor quality supplies, and also to internal disruptions, such as problems with materials resource planning systems or operator 'misbehaviour'. It has been argued that one consequence of JIT production regimes is to increase the pressure upon and accountability of supervisors (Sewell and Wilkinson 1993) .

At Telco, external and internal contingencies arising out of this high dependency system, posed significant problems for supervisors' efforts to 'meet output'. The major external contingency facing supervisors in the daily task of meeting output was the quality of incoming parts from local suppliers. A distinction needs to be drawn here between function and cosmetic quality. Functional defects were rare in incoming supplies. However, cosmetic defects such as scratches and blemishes were much more frequent, leading to a position which led one supervisor to comment that "we're still building with the same old crap".

The extent of this supply problem is illustrated by the data in table six. This presents percentage defect figures arising from defective supplies for the period November 1994 - June 1995.

Table 6

Defect rates arising from defective supplies

Date	Defective supplies (percentage)
November 1994	2.25
December 1994	2.35
January 1995	2.08
February 1995	2.43
March 1995	3.09
April 1995	2.35
May 1995	2.90
June 1995	2.87
Mean	2.54

Source: derived from Telco production records.

These data need to be treated with a degree of caution, because, as was discussed in the previous chapter, shop floor data is subject to fiddles by operators and supervisors. Nonetheless, the level of reject supplies was consistently higher than the target of 1% set by Telco's management. Given that supplies are moved onto the factory floor with no pre-inspection, this variable quality presented the supervisor with a significant dilemma; whether to reject incoming parts which might have slight cosmetic defects and thus jeopardise the day's production or whether to let them through and hope that they would meet customer requirements.

A further external contingency was changes in the daily running order. Supervisors and suppliers were issued with a daily running order detailing the models and numbers to be built. This could change however as Telco tried to respond to urgent requests from customers who may have run out of particular models. In accordance with Telco's policy of always keeping the car track running, the company would try to meet these demands, although it did put pressure on the materials-ordering system.

In addition to external contingencies, supervisors faced uncertainties arising from internal contingencies. One such internal contingency concerns parts shortages. Parts shortages occurred as a consequence of the inability of the company's materials-ordering systems to keep track of parts, resulting in some supplies getting 'lost' in the system. One example was explained to me by a QC manager:

> What we've found is that the actual number of parts used on the line doesn't tally with the number of parts being sent by the supplier. We're losing parts; we don't know how, we don't know where, we're just losing parts. The other day we had eighty four thousand screws simply disappear. They were on the computer, but when we went to the location to find them, they weren't there. When we went to find out if they had been issued, we couldn't find them - things just disappear!

There is no question of theft being suggested here; in the case of the screws, for example they were too bulky to steal in quantity and had no general purpose outside Telco's product. The 'mystery of the missing screws' was not untypical of the logistical difficulties emanating from Telco's materials and

distribution system. The following extract from my diary details a further example:

> Packing on the X line today. We should be using special containers to pack the units in for air-freight, but I had to pack them in brown boxes because we have run out of containers. They are going to have to be repacked when we get some more containers back from X.

A further source of internal uncertainty faced by supervisors was the unreliable nature of the technology. The issue of unreliable machinery has been noted in the previous chapter when discussing the difficulties experienced with recently introduced technology. However, the problem was not just one which affected new machinery, nor was it limited to one line. All the lines experienced some stoppages due to malfunctioning technology, and although the recently introduced technology seemed the most susceptible to breakdown, some more established machines also broke down on a regular basis. The following diary notes record instances of problematic technology:

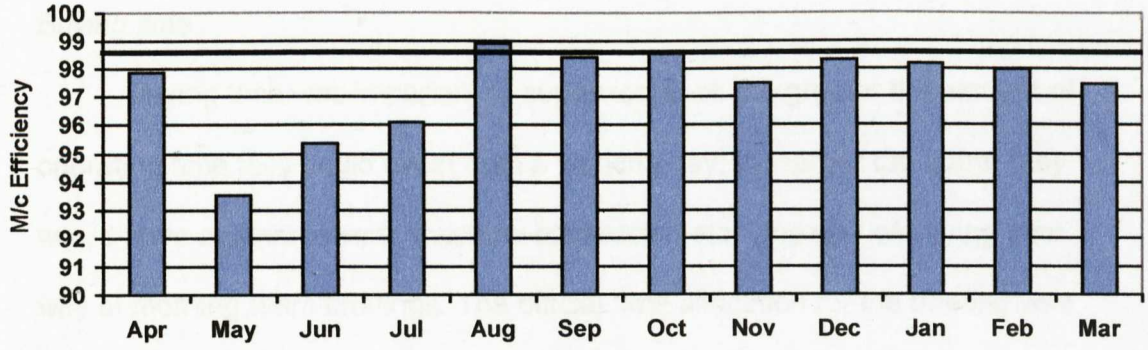
> Very few units produced this afternoon as the free-flow line was playing up again - wouldn't locate the screws properly. This problem seems to be happening fairly frequently.
>
> Anne came over to chat from her line today. She said she was bored as the machinery has been down for most of the morning and they had been put on cleaning - but that really there was little for them to do.
>
> Cath on sub-assembly said that she worked overtime on Saturday morning and came in an hour early today (Monday) to get sub-

assemblies ready for a rush job. Then she was told that it had been discovered that the calibration on her machine was faulty and the stock could not be used. She spent the morning on cleaning, waiting for the machine to be repaired. She had apparently been paid overtime for no reason.

An indication of the extent of machine problems is provided by figure six. This provides data on machine efficiency for the A1 line from April 1997 to March 1998. The efficiency target (percentage of time the machinery is functioning correctly) for A1 is set at 98.5% (this is signaled by the line across the histogram). The company benchmark was only met or exceeded in two of the twelve months recorded. The worst month, May, was almost five percent below target, and the year as a whole recorded 1.1% under target.

Figure 6.

Final Assembly Machine Efficiency Report 1997/98



Month	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Available Time (Mins)	7720	9875	8620	8620	9520	8265	10775	8620	7365	8975	8620	8265

M/c Downtime (Mins)	163.7	637.5	399.3	334.5	105.3	131.4	146.2	216.1	124	162	173.7	208.3
M/c Efficiency	97.88	93.54	95.37	96.12	98.89	98.41	98.64	97.49	98.32	98.2	97.98	97.48
First Time Yield	93.87	94.96	97.5	95.11	92.31	96.99	97.4	96.06	95.81	96.75	96.18	95.36

In sum, a number of external and internal contingencies militated against the supervisors' ascribed task of meeting output targets. A significant question becomes, how did they minimise the impact of these uncertainties? This question is addressed in the next section.

The actions of supervisors in meeting output

Experience of working for, observing and shadowing supervisors suggests that their coping strategies fell into five broad types: buying time, reducing re-work, accumulating buffer stock, developing alliances and holding the line.

Buying time

Buying time was important to supervisors, as the greater the amount of operating time they could wrest from a working day, the larger the buffer they would have against rework, machine breakdown etc. One way of buying time was at morning team briefings. The official time allocation for the briefing was five minutes, but, as previously discussed, most briefings were very short affairs involving checking on who was present, outlining the previous day's production figures and raising any problems. This normal briefing rarely lasted more than two minute, after which it was straight to work.

A further way of buying time was to reduce job-cycle times. In the previous chapter it was stated that operators' shortcutting of official working procedures was tacitly acknowledged by supervisors. On some occasions supervisors also took a more proactive role, actually instructing operators to deviate from work standards. For example, one station on which I worked involved producing sub-assemblies and then calibrating these before passing them down the line. Soon after starting I was instructed by the supervisor to cut out the calibration stage, which he justified by saying "they are always within tolerance anyway". This was not an isolated instance, or one that was confined to that particular line, as a diary entry records:

> Lorraine was moved today from the line I was on to another line to cover for absence. She said that the supervisor on that line had told her not to bother with all the checks on the work standard but just to do some of them. Official procedures were replaced by quicker, less detailed ones.

Reducing re-work

Reducing 're-work' was achieved by passing rather than rejecting units which had borderline cosmetic defects. This was a strategy used in order to counter supply problems which arose from the poor quality of components, the policy of limited stock-holding and the shortcomings of the materials planning system. The difficulties faced by supervisors in having to meet targets in the context of limited stock holding, and the on-going decisions they made concerning re-work, is illustrated by the following diary extract:

> Talking to Jo, the supervisor, today about the problems she has to deal with. She showed me a unit which had a slight light leak (when illuminated, the light 'escaped' from around the edge of the unit). She had put it to one side and would decide whether to pass it later. If it was a one-off she would send it back down the line for rectification, but if there were a lot of similar ones she would pass them to meet targets. I asked why the problem with the leaks had arisen. Jo said it was because the cases were not the correct ones for the model. She went on to say that the problem with JIT stockholding was that if an order was increased unexpectedly then there were not always enough dedicated components to meet it. In these circumstances they would try and adapt possible alternatives.

It was, however, the issue of cosmetic defects in the parts received from local suppliers which especially plagued supervisors' attempts to meet output. Given the ongoing cosmetic problems with some supplies, supervisors would use the knowledge they had accumulated of their particular customers to make decisions concerning what specific companies would accept. For example, whilst working on sub-assembly, I queried a possible cosmetic defect with the supervisor. Her response was that it would be OK and that I should 'go easy' on faults with this kit, because they were only going to X (naming a fairly down-market car marque), who were not as fussy as some of the more prestigious manufacturers.

Reducing re-work, as with buying time, involved the supervisors, on occasions, moving beyond mere compliance with operators and issuing a direct command to manipulate operating procedures, as the following example illustrates:

> Packing on the line with Sharon today when Jo the supervisor emerged from the 'lumo' saying that a new batch was coming. She said to Sharon "I want four for QC to pass". Sharon said "I'll make sure they're good ones", to which Jo laughingly replied "aren't they all good ones?". "Of course " said Sharon "but some are better good ones than others". Jo responded "don't worry I'll mark them for you". Jo then went back into the 'lumo' and subsequently four units with 'QC' marked on them in crayon arrived at 'final' inspection.

Manipulating the QC sample in this way ensured that the batch would not be consigned to re-work by QC.

It became part of the shopfloor folklore amongst operators that if a 'marginal' unit was presented to a supervisor for an opinion, every effort would be made by the supervisor to justifying passing it. The following diary extract gives one such example:

> In the 'lumo' today when Lol rejected a unit because of a light leak from the lens. Sylvia (the chargehand) came back with the unit and said "how bad is it". She put the unit back on the illumination jig and said she thought it unsatisfactory for what was a high specification model and Sylvia agreed. Alan, the supervisor, arrived at that point and after looking at the unit said that it was OK to pass it.

A final way of reducing rework involved the supervisor's 'magic paste'. On one occasion when I presented the supervisor with a completed unit which had been rejected at 'final inspection' with a scratch on the lens, he doctored the unit with what he called his 'magic paste'. Rubbing the paste gently into the surface of the lens removed all traces of the scratch. It was, he said, a procedure that was strictly forbidden, moreover, supervisors were not even supposed to bring the paste into work. However, he claimed that all supervisors had their own supplies of paste which they hid in their desk drawers.

Accumulating buffer-stock

Accumulating 'buffer-stock' refers to the accumulation of illicit supplies on the line. As was outlined in the previous chapter, supervisors would often encourage operators in sub-assembly to keep a limited amount of 'unofficial' completed buffer-stock. This had two purposes. Accumulated sub-assemblies could be used to start production immediately at the start of work, rather than having to wait for the sub-assemblies to be constructed. In addition, these buffer-stocks provided a guard against the vagaries of incoming supplies and temperamental technology; usable stock was a valuable asset in the climate of production uncertainty.

This accumulation of buffer-stock could bring supervisors into conflict with senior management. During one of my days spent 'work shadowing' a supervisor, the MD appeared on one of his patrols of the shopfloor. The MD

saw a box of units not being worked on and called the supervisor over, with a heated discussion ensuing. When the supervisor returned he said that he had been 'told off' for allowing too much work-in-progress to accumulate.

As well as colluding with operators in the accumulation of buffer-stock, supervisors also had their own stashes of unofficial supplies which they cannibalised for defective units. My diary records one experience of this:

> I was on the re-work bench today (repairing defective units ready to be passed back down the line). While I was waiting for some defective units to come through, Alan (the supervisor) told me to re-work some old units which had been declared as scrap and recorded as such. My job was to disassemble them and save any parts that had not been broken or scratched. These were banked by Alan and Sylvia (the chargehand); they did not officially exist but could be used in emergencies in the future. When he asked me to do his Alan tapped his nose, saying "we're not supposed to do this , but they come in useful as spares"

Developing alliances

Supervisors developed a range of alliances to help them manage the difficulties they faced. As discussed in the previous chapter, supervisors developed alliances with operators to interpret quality requirements leniently and to circumvent formal operating procedures. Operators were usually willing conspirators in this as it allowed them to escape some of the rigours of the

surveillance systems and also to gain a greater measure of control over their pace of work.

Alliances were also developed between supervisors. This could involve 'lending' staff to lines under pressure, and even occasionally working on each others' lines. An additional ally was the QC inspector, who dealt closely with customers and was the customers' 'de facto' representative on Telco's factory floor. If a supervisor was experiencing difficulties in meeting quality levels for a customer, the QC inspector would be called in to discuss whether the customer was likely to accept the standard of output currently being produced. One example of this negotiation occurred when a batch of components arrived with slight burrs on the exterior casing. Several of the operators were set to work filing off the burrs while the supervisor and QC inspector conferred. Eventually a decision was reached to use the components in their 'undoctored' state. It was argued that, although the components did not meet Telco's quality standards, the parts would be used, as the casing would not be visible to the final customer, the driver. Supervisors therefore, actively sought and often received endorsement from QC in passing units which fell below the company's own very strict quality standards.

The discussion of supervisor's coping strategies so far has concerned ways in which they deal with contingencies by manipulating company rules and operating procedures in response to the difficulties which they faced. This action is aptly encapsulated by one supervisor's statement that "we all cut corners, it's knowing what corners to cut". But, on some occasions

supervisors attempted to manage contingencies through enforcing regulations. This fifth coping strategy can be termed 'holding the line'.

Holding the line

'Holding the line' characterised some of the supervisor's interactions with operators. Some of these instances have been discussed in the previous chapter, such as the (not always successful) attempts by supervisors to control the extent that operators left the line and to ensure that 'cleaning up' time was used 'effectively'. Holding the line also involved supervisors in reprimanding operators whom they felt were being lax or not pulling their weight. At a routine level this could involve 'telling off' individuals, groups of workers or even the whole line if the supervisor considered there was too much talking or horseplay going on.

On other occasions, supervisors' action could be more severe. One example here concerns the 'disciplining' of Dave. Dave is the operator discussed in the previous chapter who was viewed by workers and the supervisor as rather lazy and slapdash. After a day's absence, which the supervisor though was unjustified, Dave was greeted on his return with a day making lightguides. Lightguides were the most disliked task on the line. Not only was the job very routine, it was a task that physically isolated the operator from their workmates as the workstation was cut off from the rest of the line, and it also meant standing and staring at a blank wall. In addition, the lightguides machine was notoriously temperamental. In recognition of operators' dislike of lightguides it was usual practice for supervisors to rotate

lightguide duty between operators every couple of hours. Dave's banishment to lightguides for the whole day on his return from absence was viewed by the rest of the line as a punishment. As one of my co-workers commented, "Jo's done that to teach him a lesson - not to skive off", This was also the interpretation put on the supervisor's action by Dave himself, as my diary entry notes:

> Talking to Dave in the canteen. He said he was on lightguides all day yesterday as a punishment. He commented "I put a sign over the machine saying 'sin bin', but somebody took it down".

By holding the line supervisors acted to draw boundaries round employee fiddles. Although the actions of supervisors may not always have generated the response they desired, as illustrated by the contest over 'toilet breaks', nonetheless supervisors did act as a constant reminder to operators to be on their guard. Consequently, operators were often more circumspect in some of their fiddles when a supervisor was in close proximity. Take, for example, the practice of booking faults to 'other' rather than 'self', discussed in the previous chapter. My diary notes how this fiddle was not always applied:

> Working on sub-assembly with Stuart again today, and made another error. However, rather than advising me to book it to 'other', thus avoiding a defect against my name as he did yesterday, he said in a loud voice "sorry Gerry, but that one's down to you, you're going to have to book that to 'self'". The explanation of his change in response

seemed to be that the supervisor was stood directly behind us when I committed today's error and could see that the fault was clearly mine.

Holding the line is also of interest because it provides an illustration of the limits to the supervisor's authority in their management of line staff. At the day-to-day operational level, supervisors had considerable autonomy over and responsibility for workers on the line; they allocated tasks, monitored performance, organised 'training' and kept discipline. However, beyond this operational level their authority was severely circumscribed. For example, they did not have the authority to formally reprimand or dismiss operators, but could merely make recommendations to the personnel department, or, as in the case of Dave and the 'lightguards', concoct some form of ad-hoc 'punishment'. This lack of formal authority was a source of frustration to the supervisors. As Jo commented, "personnel do not delegate enough responsibility down to supervisors". In some instances it was the very accountability of supervisors for production that acted to circumscribe a more strategic role in personnel matters. For example, one of the arguments for not involving supervisors in the selection of operators was that they could not be spared from the line.

Holding the line not only characterised the interaction of supervisors with workers, but also, on occasions, of supervisors with management. Supervisors would, from time-to-time, apply quality standards diligently as a means of expressing to management the frustrations they felt with the problems they faced. My diary records one such example:

> Frustrating day today. A lot of problems with blemishes on components from suppliers. Operators were constantly going to Paul, the supervisor, to ask if units were of an acceptable quality. In the afternoon Paul came down to 'final inspection', where I was packing, and said to Sharon (on final inspection), "all the ones with blemishes - pass them all. If they come back from the customers then management might appreciate the problems getting stuff out and QC might take some action with these bloody suppliers."

Although this type of holding the line to try to 'prove a point', did occur it was not common. While supervisors would frequently complain about the quality of incoming parts, and at management for not doing anything about it, in the main their actions were concerned with resolving and not confronting supply problems.

The above account of supervisors' actions illustrates that they were involved in a series of network relations with a range of 'actors' on the shopfloor. The supervisory network will now be analysed using the three categories of social relations: knowledge, reciprocity and identity.

Knowledge

Supervisors used their accumulated shopfloor knowledge both of customers' standards and of the production process to achieve daily targets. Knowledge of customers' standards was used in order to determine whether a unit would meet the demands of a particular company. Supervisors made on-the-spot judgments to pass or reject a unit based on their experience of

quality levels previously accepted by customers, and also, in some cases, through negotiation with the QC department. Varying standards were applied between different lines (with standards being applied most stringently on up-market car marques), and also, within lines in circumstances where a line served more than one customer. Interestingly, although the application of differing standards between customers is a feature of the clothing industry (Edwards and Scullion 1982; Moule 1998), it does not appear in other accounts of production in the motor vehicle sector.

Supervisors also used their knowledge of the production process to short-circuit some of the formal operating procedures. They would base their judgments on their knowledge of their line; where an element of a checking function was undertaken at two points in the process then they might tell the operator at the first station to miss out that function. Supervisors also used their past experience and, where certain components had a history of being 'error-free', they would instruct operators to take short-cuts.

Supervisor's actions in deviating from official workplace practice were significant factors in creating shopfloor norms whereby operators 'legitimised' their own circumvention of formal rules and procedures. As was discussed in the previous chapter operators would make their own decisions about visual quality of units and also develop their own shortcuts. The justification often used for both these fiddles was that they were not doing anything that the supervisors did not do.

Reciprocity

Supervisors reached reciprocal arrangements with their peers, with QC inspectors and with operators. Arrangements with fellow supervisors, such as the loaning of staff to lines that were having particular problems, enabled supervisors to resolve difficulties between themselves. Reciprocal agreements with QC were also broadly co-operative. However, while QC staff were strategic allies, the relationship was not simply one of collaboration but also one of 'hoodwinking', as demonstrated by the 'doctoring' of the 'end-of-line' sample. At the heart of the supervisor-QC relationship is the issue of what constitutes appropriate quality levels in the context of having to meet output. The particular problem here is cosmetic, not functional quality. General definitions of quality, such as 'fitness for purpose' are difficult to apply uniformly here, because there is a degree of interpretation involved; cosmetic standards are not totally objective or measurable. In most instances supervisors and QC staff would attempt to resolve this issue of standards by reaching an agreement as to what constituted appropriate quality levels. However, the supervisor, through doctoring the 'end-of-line' sample, attempted to ensure that QC were given as few opportunities as possible to interpret quality standards in a way that would put pressure on the line's ability to meet daily output targets.

Supervisors' key reciprocal arrangements were with workers. This included instructing operators to contravene official procedures, such as circumventing work methods, colluding in joint rule-breaking, such as hoarding buffer-stock and turning a 'blind-eye' to workers' circumvention of

operating procedures. However, not all of the relationship of the supervisors with workers can be classified as reciprocal; in the case of holding the line, supervisors sought to challenge and control worker actions. Thus, supervisors' relations with workers embraced a range of positions from active collusion in circumventing procedures through to attempts to discipline and admonish operator rule-breaking. This raises the question of what explains this seemingly contradictory relationship.

The key explanation is the potential impact of worker actions on targets. Where worker circumvention of rules and operating procedures may have made the achievement of output targets more attainable, such as the hoarding of secret stocks or the passing of marginal units, these activities were generally supported by the supervisor. On other occasions, when operator actions threatened production, for example through non-attendance, then supervisors would try to exert control to amend worker behaviour.

The level of accountability experienced by supervisors supports this interpretation of their actions. The vast array of production data available to management gave them access not only to production figures but also to line defect rates and reject levels. It was the supervisor who was ultimately made answerable for unsatisfactory performance. In these circumstances it becomes logical for the supervisors to play an active role in massaging defect figures, for example by passing marginal units rather than recording them as unsatisfactory and conspiring with operators in the non-recording of some worker errors. By contrast, supervisors would gain no comparable advantage by supporting some other fiddles such as the contest over 'cleaning-up' time.

In considering the actions of supervisors and the reciprocal understandings they reached with operators, it is instructive to compare the social relations of supervision at Telco with those at Nippon C.T.V. (Delbridge 1998; Delbridge and Lowe 1997). While supervisors at Nippon were under pressures similar to those at Telco to achieve output targets, they operated in an environment where uncertainty had been reduced, leading to a different stand on worker fiddles. Nippon was relatively successful in obtaining consistency of both quality and delivery of supplies, and also enjoyed a comparatively protected and secure product market as supplier to their own distribution division. This position allowed the production process to be planned and controlled with greater assuredness, thus insulating the shopfloor from significant sources of uncertainty. Consequently, unlike their counterparts at Telco, supervisors at Nippon were rarely forced into reaching accommodations with the workforce and, rather than acting as a key factor in stimulating employee fiddles, supervisors were 'very important in marginalising the impact of 'misbehaviour' (Delbridge and Lowe 1997:415). At Telco, by comparison, the failure to guarantee the quality of supplies and the stringent delivery demands of a competitive external market created tensions and contradictions on the shopfloor which both facilitated supervisory alliances with workers and provided the workforce with the legitimation to engage in fiddles of their own devising.

This comparison raises the issue of the relationship between an organisation's external operating environment and the collusion of supervisors in circumventing operating procedures. Conventional analysis tends to link the

toleration of fiddles to a company's influence over its customers (Lupton 1963) It suggests, in the main, that supervisors are less likely to indulge fiddles in competitive than in non-competitive or oligopolistic markets (Burawoy 1979). The evidence from this study suggests that under JIT systems this conventional analysis needs to be amended, as JIT scheduling makes demands not only on price but also on quality and delivery. In the case of Telco, the requirement to meet the JIT scheduling demands of powerful customers exposed and magnified the problems of poor quality supplies entering the company's own JIT system, thus creating difficulties for the supervisor. In this situation, where it was impossible for supervisors to have an effect on the major source of their difficulties, they turned instead to one of the factors over which they had some sway, namely labour. Conspiracy with workers presented supervisors with an achievable option in coping with the demands of production in a situation where they were unable to influence one of the root causes of the tribulations that beset the line. The demands to meet output targets, coupled with poor quality supplies, underpinned reciprocal agreements between supervisors and workers. This suggests that within JIT scheduling the willingness of supervisors to tolerate or conspire in fiddles is not determined solely by the influence a company holds over customers, but by the organisation's market position with both suppliers and customers.

Identity

Issues relating to the identity of the supervisor can be explored through their relationships with managers (Armstrong 1983; Child and Partridge 1982; Delbridge 1997). The question here is whether supervisors are most aptly characterised as agents of capital, as representatives of labour, or men-in-the middle between capital and labour. The supervisor-manager relationship at Telco is complex and somewhat contradictory.

On the one hand, there are reasons to suggest that supervisors' interests and identity did not coincide with those of management. Firstly, management actions and systems were largely responsible for the difficulties faced by supervisors. The poor quality of supplies, unreliable technology and failures with internal logistics were all, at least in part, due to managerial shortcomings. This supports previous research suggesting that the problems supervisors face can be of management's making (Child and Partridge 1982; Lupton 1963). Secondly, supervisors were given very little direct autonomy in decision-making, for example the disciplining and dismissal of workers remained a function of the personnel department. Thirdly, supervisors were held accountable by management for reaching daily output targets. Supervisors monitored workers and were, in turn, monitored themselves, thus their experience of surveillance was as subjects as well as objects (Armstrong et al. 1981). These three points suggest that it would not be appropriate to view supervisors as agents of capital.

Set against this view is the evidence that supervisors at Telco seem, on the whole, to have accepted and internalised the values of management, thus

it might be suggested that they do act as the representatives of capital. This line of argument is adopted by Armstrong in his study of supervisors at a shoe factory, where he contends that although supervisors were tightly controlled, their interests were linked to those of capital because the way in which they tried to illustrate their value was 'by demonstrating their usefulness in the function of capital' (1981: 355). This analysis has some resonance with the situation of supervisors at Telco. Despite complaints that management were not providing quality supplies, and, not withstanding occasional examples of 'defiance' through holding the line, supervisors strove on a daily basis to fulfil management's demands and expectations. Even when supervisors formed reciprocal agreements with workers and circumvented operating procedures, these actions were in support of the goal of the organisation.

An alternative analysis of the identity of the supervisor at Telco is that of the 'man-in-the-middle', which has characterised some studies of supervisors (Fletcher 1969; Lowe 1993). As Fletcher comments:

> Industrial supervisors, classically foremen, are men in the middle. Wedged between workers and management they represent both, to each other, and neither to themselves. Supervisors are constantly torn by competing demands and loyalties. They have come up from the ranks but are not part of management. Nevertheless they are the voice of the front office that is heard on the shop floor (1969:341).

Supervisors at Telco exhibited some of these characteristics; they had mostly been promoted from the ranks, and they were subject to competing demands. To labour they represented management in that they were responsible for

maintaining shopfloor discipline and for ensuring that managerially imposed targets were achieved. Similarly, to management they represented labour as they experienced scrutiny as 'subjects' of surveillance.

Given these conflicting perspectives, how is the identity of the supervisor at Telco best categorised? The actions of the supervisors and the outcomes of these actions suggest that their identity can be best seen as representatives of capital, albeit subordinate ones. Their commitment to production targets indicates that they were not 'in the middle' between management and labour, but were firmly wedded to the objectives of capital. When supervisors were faced with employee action which militated against the achievement of production targets, then their response was to challenge such behaviour. Put another way, when decisions had to be made supervisors did not 'sit-on-the fence between management and labour, they chose to jump on the side of fulfilling the objectives of capital. Also, notwithstanding occasional attempts to 'hold the line', the supervisors' own rule-breaking was pursed in the interests of capital.

However, the issue of identity is not merely determined by actions. As was argued in the previous chapter on workers, the meaning actors attribute to their behaviour is also important. The analysis of supervisors as representatives of capital is muddied if we take account of the supervisors' own view of their actions. In a number of instances supervisors saw their actions as 'hoodwinking' management and bending rules to expedite their own interests. The hiding of 'secret' buffer-stocks and the illicit use of the 'magic paste' are examples where supervisors clearly identified themselves as

defying management in order to protect themselves from censure. Therefore, the data from Telco suggest that a simple uniform classification of the identity of the supervisor is inappropriate. On the one hand, the supervisor can be characterised as agents of capital through their actions, however on the other hand, supervisors' own views of their actions do not support this analysis. There is a parallel between the actions of supervisors at Telco and the behaviour of workers at Nissan (Stephenson 1996). Stephenson argues that workers act in a way that supports managerial initiatives, but follow this course through self-interest and don't attribute any pro-company sentiments to their actions. Stephenson calls this worker behaviour 'insincere compliance'. Similarly, at Telco, although supervisors through their actions strove to fulfil the demands placed upon them by management, their actions were driven by self-interest within a context where they were critical of management. Tentatively, supervisors at Telco might be characterised as 'insincere capitalists', capturing the sense in which their action supports the goals of capital, but that this was driven by self-interest rather than a strong sense of identification with management.

Summary

The evidence in this chapter adds to the number of studies that suggest a heightened role for the supervisor on the new shopfloor. But, their responsibilities did not emanate from a strategic devolution of personnel matters to line managers as advocated by proponents of HRM. Rather, it was the accountability for team performance in the context of demanding

customers and production uncertainties that shaped the supervisors' role. This accountability was enhanced by the profusion of production data that was available to management, and against which the supervisors' performance could be quickly judged. Supervisors at Telco were engaged in a range of 'shock-absorbing' activities (Bonnazi 1998), devising ways of coping with ongoing, day-to-day shop-floor problems in order to meet output. This involved supervisors in network interactions with staff at all levels in the organization, and supports the view that the increased responsibility on supervisors 'has led them to become involved in a widening network of interaction' (Mallory and Mollander 1989:40).

Why did they respond in this way? Mallory and Mollander argue that supervisors are evaluated in relation to performance measures 'over which they have at best limited control' (1989:41). This analysis seems applicable at Telco as they were charged with and evaluated on the basis of meeting targets, but had little control over some of the key contingent production difficulties. This left them with the options of using what influence they had at the point of production, with workers, colleagues and QC.

They used their knowledge of operating procedures and customers' requirements to manipulate operating procedures and quality standards. This involved them in a series of reciprocal arrangements on the shopfloor. They were often at least tacit conspirators in many of the fiddles pursued by operators and, in some cases, actually instructed workers to break official operating procedures. This manipulation of 'standards' ossified to become a central feature of Telco's shopfloor culture. New recruits, like

myself, quickly learnt to circumvent quality and control procedures both with and without the consent of the supervisor. However, supervisors' relationships with other shopfloor personnel were not always characterised by reciprocity. For example, they also sought to constrain the boundaries of worker fiddles, when these ran counter to their interests. This pattern of complicity and confrontation that emerges between supervisors and operators indicates that supervisors had a major impact upon the labour process at Telco.

The issue of reciprocity has shown that supervisors were involved in complex and at times seemingly contradictory relationships with workers This complexity and contradiction also characterised their relationships with managers. The discussion of identity suggested that while the actions of supervisors often supported capital, supervisors themselves saw their practices as rule-breaking, thus leading to the classification of supervisors as insincere capitalists. Also, supervisors' relationships with QC combined both cooperation and 'hoodwinking'.

At a broader level, a key finding to emerge from this account of supervisors is that it supports the theme of continuity and change evident in the previous chapter. In the case of supervisors, change is represented by the enhanced responsibility they were accorded with the devolution to teams of quality and productivity targets, and also by the increased monitoring and surveillance they experience through the plethora of production data. This is consistent with other accounts of the evolving role of supervisors within Japanese transplants (Morris 1999, Sewell and Wilkinson 1993). However, the findings also caution against overemphasising disjunctures with the past.

Evidence of supervisors conspiring with workers (Bensman and Gerver 1963) and with quality control (Lupton 1963) occurred in accounts of workplace relations more than two decades ago. Supervisors, in Telco at least, seem to be using 'old' methods to cope with the problems of the 'new' shopfloor.

The problems faced by supervisors arose from the difficulties Telco experienced in controlling the contingencies impacting upon production. These included external contingencies, notably buyer-supplier relations, and internal uncertainties such as technology and logistics. Buyer-supplier relations have been identified as an important factor in influencing the labour process (Rutherford et al.1995); the data from Telco suggest that this analysis can be usefully extended to account for the role and responsibilities of the supervisor.

The problems experienced by Telco's supervisors raise questions concerning the company's lack of control of its external and internal operating environment. These issues form the basis of the next chapter.

Chapter Eight

Commercial Networks

This chapter concerns Telco's commercial networks. Commercial networks refer to relations with buyers and suppliers in the context of industry environment in which a company operates. Commercial networks are of interest in a study exploring the labour process for two linked reasons. Buyer-supplier relations are a significant factor in transmitting social relations in production between companies (Rutherford et al.1995). Also, product market conditions can also influence intra-firm management-worker relations (Kelly 1985; Lupton 1963; Ram 1993). Both these issues are important for this study. As previous chapters have highlighted, commercial networks have played a major influence on the actions of workers, supervisors and managers at Telco.

This chapter presents a description and analysis of buyer-supplier relationships at Telco. The chapter is organised in the following way. The first section provides a brief outline of current developments in buyer-supplier relations. The next section is a discussion focusing on Telco's relationship with its suppliers and this is followed by an examination of the relationship between Telco and its customers. The final section provides an analysis of the company's commercial network using the three categories of social relations, knowledge, reciprocity and identity.

Recent developments in buyer-supplier relations

The last two decades have seen some significant changes in the conduct of business between buyers and suppliers (Grabher 1993; Helper 1993). One of the major influences stimulating these changes has been the growing interest by 'Western' firms in the seemingly more constructive relationship between Japanese manufacturers and their supplier companies than has traditionally existed in the West. Western supplier relations have been characterised as typically market-centred. This involves short-term contracts based on price-led competitive tendering, with little loyalty or commitment from either side, often leading to problems with delivery and, especially, quality (Morris and Imrie 1991). This relationship has been designated the 'arm's-length' contractual relationship (Sako 1992). In Japan, by contrast, buyer-supplier relations have been described as 'obligational' (Morris and Imrie 1991) or 'relational' (Sako 1992) which involve a series of close ties between buyers and suppliers (Morris and Imrie 1991). These ties are seen as generating mutual benefit, with suppliers obtaining relative security of contract and buyers increased reliability over delivery and quality (Sako 1992).

Japanese transplants locating in the West have reported unfavourably on the performance of 'local' suppliers (Kumon 1994). One stimulus for the establishment in America of Japanese first-tier suppliers to the automotive industry was the inability of Japanese vehicle transplants to obtain components of sufficiently reliable quality from indigenous companies (Kumon

1994). This criticism from Japanese transplants, along with the need of Western companies to compete on quality, has led to moves to transform buyer-supplier relations in the West.

This has been especially evident in industries that have faced severe competition from Japan, such as motor vehicles (Rutherford et al.1995). Recent developments in the British motor vehicle industry have included the increase in teamworking and cellular production in supplier companies in response to pressure from their customers and the nascent development of supplier clubs (IRS 1995). A similar range of developments has occurred in home-based American vehicle manufacturers with the introduction of initiatives such as Chrysler's embryonic kiertesu scheme (Dyer 1996), and the more general use of 'voice' rather than 'exit' strategies (Helper 1993). That is not to say that a complete transformation of buyer-supplier relationships has occurred, rather that there has been a move towards greater co-operation, albeit in a piecemeal and uneven fashion.

This move towards relational/obligation contracting raises the issue of power relations between companies. While obligational/relational contracting might be based on co-operative relations, this does not negate the significance of relative degrees of power between buyer and supplier. As Grabher comments in relation to buyer-supplier networks:

> it is inaccurate and misleading to characterise networks solely in terms of harmonious collaboration and concord... each contract in a network relation can be a source of conflict as well as of concurrence. Power

> may, at least temporarily be distributed unequally between network partners (Grabher 1993:10).

Grabher, citing the traditional Japanese pyramidal structure of buyer-supplier relations, argues that the power of the parties declines the further they are from the pyramid's apex, suggesting that buyers are in a position to exert power over their suppliers. There is also evidence from Japanese transplants to suggest that buyers, especially final manufacturers, can wield significant power over their supplier companies (Garrahan and Stewart 1992; Stephenson 1996). That is not to argue that buyer-supplier relationships can simply be reduced to one of supplier subservience. In some cases supplier companies may be able to exert considerable power over their buyers, for example, by having technical expertise which would be difficult to access elsewhere (Rutherford et al.1995).

Thus, while firms may be moving increasingly away from the adversarial approach to contracting which has characterised Western buyer-supplier relations they are not necessarily in a relationship of equals. Telco offers an important opportunity to analyse recent experience in trading relations. It is in a sector that has been at the forefront of developments in buyer-supplier relations. Moreover, as a first-tier provider, it is both buyer and supplier within the sector and thus provide an opportunity to assess power relations from both positions. It is to these relationships that the chapter addresses next.

Telco and its suppliers

When Telco first became operational in Britain in 1987, approximately 85% of their supplies were imported from Japan. This figure has been reduced, mainly by increasing the percentage of goods procured locally (within the EC). Also in the case of printed circuit boards, Telco established their own in-house production facility to alleviate the need to import from Japan. Currently, Telco has approximately forty local suppliers and one local sub-contractor. The company follow a number of procedures for the accreditation of their suppliers. For suppliers of proprietary items Telco will usually insist that the company has the industry standard 'kite mark' of ISO 2000. For 'key' suppliers of non-proprietary parts (around 25 companies), Telco seemingly invoke a rigorous selection process. Telco's QC director explained the procedure used and the stages involved. The first stage is an initial audit by the QC department. This involves a review of a potential supplier's customer base, an appraisal of the organisational structure and a visit to look at the organisation of production, general cleanliness and the plant and equipment. The second stage is a full vendor audit of quality systems. This focuses particularly upon the capacity of in-house procedures to ensure production processes are capable of delivering appropriate quality levels. At the same time, Telco's purchasing department provide a technical specification in order to generate a quotation for the component. This second stage audit generates a supplier grade for the potential customer. An A grade, of which there are none currently, indicates that Telco has complete confidence in the company. B grade indicates an approved supplier who will

usually be re-audited in three years time, while a C grade is also approved but subject to annual audit. D grade indicates non-approval.

This initial selection and audit process forms part of a broader programme of Telco's relationship with their suppliers. Approved companies become part of Telco's supplier development programme. This usually involves giving companies technical and staff assistance at product development stage to ensure that they are capable of volume production at appropriate quality levels. In an interview, the manager of Rigo[9], Telco's sole sub-contacting company, indicated that they were given significant help by Telco to reach required production standards, including training of Rigo staff, and help and advice on production methods. Similarly, the sales manager at Lamtec, one of Telco's suppliers, observed that Telco was a company that tried to work with and support their suppliers.

The extensive selection criteria and the emphasis on support and partnership would indicate that Telco favour an obligational rather than an arms-length approach with their suppliers. Given the apparently rigorous and ongoing nature of this buyer-supplier relationship it seems somewhat surprising that poor quality supplies were recurring problem on the shop-floor. That is not to say that all suppliers and supplies were unsatisfactory, but that certain key components were causing difficulties. The QC director commented that 'we have about six suppliers and twelve components which constantly give problems'. This raises the question of why these supplier problems have

[9] All supplier companies have been given pseudonyms

emerged. There are two broad answers: market weakness and internal systems. It is these issues which are discussed next.

Supplier problems - market weakness

Market weakness occurred when Telco entered into relations with suppliers in which they, Telco, were in a disadvantaged market position. There were a number of situations in which this occurred. In some instances Telco's suppliers were large multi-national companies for whom Telco's orders represent only a fraction of their total business. This left Telco somewhat powerless to exert any significant influence on these supplier companies. A member of the QC department commented:

> In a lot of instances you're dealing with companies that are vastly larger than Telco, people like Panasonic, Toshiba, you know, and you can bang the table with those sorts of people all you like, the amount of business we take off them is a drop in the ocean to them. So you can't make demands of those sorts of people.

In other instances Telco were left with no options concerning their sources, as their customers dictated the second-tier supplier to be used. A member of the QC department cited one such instance where a customer:

> insisted that we buy it from a company called Acco in France. Now then, because this is a customer request, or a customer insistence, we have to go to Acco in France to buy this cable and if Acco in France mess us about, we have problems..... You know, saying "well, I'm

sorry, you can't have any more cables for another four weeks". And there's nothing we could do about it at all. It would stop our production.

A final situation where Telco faced market weakness was in dealing with oligopolistic second-suppliers who provided them with specialist components. This situation was particularly apparent with Lent Plastics, a specialist printing company that were one of the few European firms able to supply Telco with the part they required.

Telco's market weakness created a situation where the company was in a high-dependency relationship with some of it suppliers but was unable to create a reciprocal dependency. In some cases they attempted to retrieve this position by 'exiting' from relationships as the QC director explained:

> There are some areas where you tend to be over a barrel because there only tends to be maybe one or two suppliers of a certain product and you're stuck with it. And you may have bad quality and you may have bad deliveries, you've got to cajole them along and try and get them to supply you because they're the only people doing that kind of thing. Then you've got to seriously think about risk management and what do you do if this company fails. Now we've got one or two areas where we've tooled up with Japan in parallel with our suppliers supplying us here. We've said we don't have any faith in this company any more, we're tooled up in Japan unknown to them and we just switch them off. "Sorry, we've tried to work with you but we're not

> getting anywhere". From the self-preservation point of view we've had to put some of this business back to Japan.

This was, however, an extreme example. In other cases market weakness continued to represent a significant problem for Telco in its relationship with suppliers. However, this is not the sole explanation of supply difficulties, the failure of internal systems is also a significant factor.

Supplier problems - failure of internal systems

'Failure of internal systems' refers to the inconsistent application of Telco's own procedures with suppliers, and the difficulty in tracking rejects emanating from problems with the materials planning system. An example of inconsistent application of procedures with suppliers concerns supplier audits. As was explained earlier, key suppliers were supposedly subject to a full audit. Indeed, company documentation states:

> As part of the supplier sourcing procedure, all potential suppliers will undergo a quality assessment which will be undertaken by Telco QC staff.

However, the system as described by the QC director and outlined in the documentation is not always applied in the same way in practice. During a discussion with a member of the QC department I outlined the audit process as it had been explained to me. His observation was:

> That's the theory behind it but to actually carry out an assessment like this in the majority of the companies that we deal with is probably at least a week's work for one person and two people are usually

> involved. So it's a fairly high investment of resources to carry out this assessment. So what we do, we tend to make an initial visit, get a feel for the place and you can generally say "yes, we're going to go with it" or "no, we're not going to go with it". So, we may go ahead with various projects with the supplier and then we go and do a systems assessment later on down the line.

One reason for the lack of resources to undertake full audits relates to a change in policy by the parent company, concerning local suppliers. Originally, the company planned to transform its supplies base over two years, moving from a situation of 85% sourcing from Japan to 85% EC or in-house sourcing. However, the spiraling value of the yen caused a revision of this target to 85% localisation within six months; little wonder perhaps that procedures 'slipped'.

There is other evidence to suggest that supplier audits were not applied consistently. In a discussion relating to the quality problems emanating from some suppliers, the QC director commented:

> To get faults down to 75 parts per million you've got to get the process that can actually give that and a lot of them don't have processes that can.....their processes are not capable. So they get down to final levels by 100% inspection, and 100% inspection is not 100% accurate; you miss things with 100% inspection.

These comments raise the question, how did these supplier companies survive the supplier audit? The Telco supplier assessment manual contains sections relating to quality assurance in production, inspection and test, and

quality co-ordination. These sections ask specific questions, such as "is on-going process capability monitored during production?" "what methods are used to guarantee conformance of parts during production?" and "what documented procedures for corrective action, response and reporting exist?" It seems somewhat unlikely that if the complete audit had been applied rigorously, these supplier shortcomings could not have been forecast.

This example of the lack of appropriate quality systems in second-tier suppliers reflects the experience of Supplier Co, a small second-tier supplier in the motor vehicle sector (Roper et al.1997). Supplier Co's solution to the quality and delivery demands of their main customer was to resort to 100% inspection which did not resolve quality problems. What Supplier Co did provide was a relatively flexible and cheap source of components. It may be that Telco hoped for the same advantages with some of their suppliers but were finding the consequences somewhat fraught.

This issue of inconsistent application of supplier audits arose during discussions with one of Telco's supplier companies. The company concerned was Rigo Plastics, a small firm situated less than a mile from Telco who act as a sub-contractor for Telco, putting together sub-assembly units. The manager of Rigo stated that, while Telco's audit of them was 'fairly exhaustive', he felt that it was tinged by more than a shade of pragmatism:

> I think they were fairly exhaustive but, I do feel as though they may have actually made their mind up beforehand. I know that they were perhaps in a situation where they felt they needed to find an answer quickly and I think that we met the criteria and they didn't perhaps

> compare us with what else was available too closely. I think that the situation was, and this is only my own personal view, that they probably felt that they hadn't got the staff; they were falling behind with their schedule and they saw us as an ideal avenue to get over their problem.

My own visit indicates that on at least one criterion, namely, house-keeping and facilities, Rigo would struggle to meet even any moderate benchmarks. My post-visit notes made the following observations:

> The work environment seemed somewhat crowded and chaotic. Boxes were stacked everywhere and we had to move some of the boxes to talk to the operators. The floor was not clean, it had polythene foam and empty crates on it. Operators wore their own workware and shoes. On the corner of one desk were two telephones and a fax machine used to send through the Telco production schedule. It seems an age away from Telco.

Under the criterion of house-keeping and facilities, one of twelve in the Telco supplier assessment manual, the questions asked are: "are good house-keeping practices encouraged by active company policy?" "are handling facilities adequate to maintain product quality?" "is the appearance of the site appropriate to the product manufactured?" At the time of my visit the answer to all three questions would have been 'no'. It may of course have been the case that Rigo had 'doctored' its premises prior to the audit. But, as there were regular visits by Telco's QC staff to Rigo's premises, it seems unlikely that the conditions of production could have been disguised permanently, suggesting that the condition of Rigo's production environment was known to

Telco. The visit to Rigo would indicate that, as in other practices, Telco's commitment to quality was compromised by their need to achieve output.

In addition to the seemingly lax application of audit criteria, Rigo provided other examples of Telco had seemingly failing to follow its own procedures. At the behest of Telco, Rigo included a 'traceability' docket with each batch of sub-assemblies, which allowed quality problems to be tracked back to their origins. However, the situation developed where:

> We found the empty cases were coming back from Telco with our dockets still in them. So we would find that they were taking the cases out to finish the assembly and they wouldn't be doing anything with the paperwork.

A further departure from agreed procedures concerned monthly 'quality' meetings. Telco had initiated these in order to discuss quality issues on a regular basis. But these meetings had atrophied; Telco staff said they were unable to attend, citing staff shortages and pressure of work as reasons.

This seemingly lax attitude of Telco to audits and other supplier-liaison procedures was not, however, supported by evidence from another of Telco's suppliers, Lamtec. The sales manager of Lamtec commented of the audit by Telco:

> It was a very in-depth look at the way we do things. They basically came along with video cameras and still cameras, took pictures of the machines, took pictures of the processes. We took the machines apart and they took pictures of the inside of them.

The sales manager expressed the view that the audit was rigorous because Lamtec were using a technique that was not practised in Japan, therefore prompting Telco to proceed with some caution. Thus, Telco seems to have followed their own policies in individual cases where there were specific reasons to do so. More generally, it appears that Telco's application of its own policies regarding suppliers was patchy.

The problems of Telco's internal procedures does not only relate to audit data and other related supplier-liaison systems, the internal information generated by Telco's material resource planning systems also caused difficulties with suppliers. One problem stemming from this information has been illustrated in the previous chapter, with the mysterious disappearance of several thousand screws. A further consequence of this inability to track materials adequately was to create difficulties in determining the correct level of rejects which, in turn, undermined negotiations that Telco's staff held with suppliers. A member of the QC department recounted one such instance:

> Now we had an example 12 months ago or so, where a particular supplier, and they're our worst supplier, was giving us huge problems and we were told the line are finding 2 or 3% defects, maybe more, maybe as high as 10% defects. Go and hammer the table with them. Okay, yeah, fine. What I did, I sort of put together some figures that I was given by people went into the supplier, hammered the table saying you're supplying us with 5 or 6% defects overall. They immediately slapped figures on the table that showed that actual parts returned to them were running at 0.7, 0 .8%. So it immediately blew my figures

> straight out the water, I couldn't argue against them, you know, it made me look very, very small. What we've found is that the actual number of parts being used on the line doesn't tally with the number of parts that are being sent in by the supplier. The supplier is sending in vastly more quantity, a vastly higher quantity of parts than we're actually using. We're losing parts. We don't know where, we don't know how, we don't know why, but we're losing parts.

While the QC director claimed that Telco's quality procedures represented "the Bible" as far as how the company operates, a very different picture emerges; one of the failure of internal systems either to be applied consistently or to function appropriately, generating significant problem in ensuring supplier quality. These systems deficiencies seem to represent a failure to either monitor, resource or construct robust policies with suppliers. As such, management must assume at least some responsibility for the supply problems faced by Telco.

Having cited managerial culpability, it is interesting to note that the issue of allocation of responsibility for supply problems was one that caused some internal friction at Telco, especially between the production management and QC staff. It is this final aspect of supplier problems which is discussed next.

Supplier problems - Internal Friction

One consequence of the poor quality supplies was the emergence of 'internal friction', characterised by the blaming of one department or group of workers by another for poor quality supplies. The overall responsibility for supplies lies with the QC department and consequently members of that department were targeted for not doing enough to resolve supply problems. The senior production manager in particular derided them as being weak. His view was that they were not aggressive or confrontational enough with suppliers and that they should 'bang the table' more with them, as Telco's own customers did.

For their own part members of the QC department argued that poor quality of supplies was, at least in part, due to production. One interviewee claimed that the production manager would blame the QC department but that a more significant problem was the failure of operators under the senior production manager's control to apply standards consistently. The conflict inherent in this 'blame culture' was encapsulated by the comment of another member of QC:

> We also have a problem whereby we've had many, many units returned to us with purely visual faults, it works perfectly but there's dust inside it or there's a lens is missing, all sorts of silly things happen. And these are things that basically should be picked up by the operator on the line and they haven't been. And we, the QC department are saying to production, "look you should be picking these things up". Production are saying "you're right. but, if we were supplied

with parts in the first place we wouldn't have to have these problems", and you start to get into a bit of a vicious circle here.

In identifying internal friction as an issue the point being made is not to try to achieve some apportioning of responsibility for supplier problems, but simply to illustrate that these problems are themselves a source of internal dispute and conflict. More broadly, this internal friction provides another example of the lateral conflict between departmental managers indicated in previous chapters.

Having discussed Telco's relationships with its suppliers, this chapter now moves on to discuss the company's relationships with its own customers.

Telco and its customers

Telco's relationship with their customers seems to be one of subordination. The QC director commented that:

> The clout that the major car companies have on the first tier suppliers is tremendous. We just, we go through hoops, we jump to attention, we're there on their doorstep if they've got a problem.

Other evidence from Telco supports this view of total customer power. The production manager referred to customers 'banging the table' if they experienced any problems. Also, on the line, any visit from a customer (either actual or potential) was preceded by a frenzied bout of 'housekeeping'.

During interviews with staff at one of Telco's customers this impression of buyer power was confirmed. This is illustrated by the comments from a

buyer who was concerned that Telco were being a little reluctant in responding to customers' changing needs:

> Last year we said (to Telco), you have got to start looking at this (emerging) technology, otherwise you can forget any more business - it's as harsh as that. We had a meeting with the U.K. people and basically told them that we wanted their Japanese managers to attend so that they would appreciate that we weren't prepared to be messed around. We can't afford to waste time on people who can't give us any benefits.
>
> G.P. Have you got the power to summon people from Japan?
>
> We have when it's business..we have to be ruthless...it's a very cut-throat market.

During my time with this 'customer' I was given the opportunity to interview a buyer in the company who had recently joined them from Telco's supply team. When asked about the difference between working for the motor manufacturer and Telco his response was 'now I get to do the kicking instead of being kicked'.

This raises the issue of Telco's performance, and how frequently they were 'kicked'. According to interviewees at the motor manufacturer, Telco's record as a supplier was good. Telco had not only gained preferred supplier status, they had also won supplier awards. This is not to say that problems did not occur, and when they did they generated heavy penalties. For example, this customer discovered quality problems, Telco were required to send their own staff to rectify the defects. In such instances Telco would also be debited

for the cost of any other components that might be damaged or scrapped during the rework process. This form of arrangement occurred between Telco and all of their customers.

The difficulties Telco faced in achieving customer demands have several sources. They are in part due to the problems discussed earlier, such as: poor quality supplies, the materials planning systems and temperamental technology. They are also a reflection of two further related issues, Telco's customer base and an under-resourced QC department. Concerning the customer base, Telco began their British operation with just one customer. Since that time they have expanded and now supply motor vehicle manufacturers in Italy, Germany, France and the Netherlands and other Japanese companies in Britain. However they still remain in the disadvantaged position that confronts many SME's, namely that they:

> Do not face product markets made up of hundreds or thousands of customers, but instead have relatively few customers with whom they regularly do business. Commonly these customers are much larger organisations who potentially have a great deal of power over their suppliers (Kinnie et al. 1998:7).

One example of this power imbalance and the problems that it caused was that Telco felt obliged to respond to any last minute changes in production scheduling from its customers. However, as the previous chapter illustrated, Telco's limited stock-holding meant that complying with last minute demands might involve the use of non-dedicated parts, with the consequent possibility of quality problems.

Moreover, while Telco's customer base had not grown sufficiently to overcome their relatively disadvantaged position, its rapid expansion had created problems through stretching the limited staffing of the QC department. The unwelcome consequences of this limited staffing were highlighted in the case of an Italian customer rejecting over one thousand units which did not meet an agreed standard. To understand why this occurred requires a brief explanation of the role of the QC department. Each customer has a member of Telco's QC department as their liaison officer and these meet at least once a month. The QC member is the customer's de-facto representative on the shop floor. They will agree specifications with the customer and try to ensure that these are met. This is a particularly significant role because, as Telco's product requires standards of visual as well as functional quality, a degree of subjective assessment is involved As a member of QC argued, quality in the case of Telco involves more than simply 'fitness for purpose'. The QC staff have key functions in agreeing quality standards, transmitting these to production areas, monitoring quality standards and acting as final arbiters in quality decisions. For this procedure to operate effectively, requires close co-ordination between the shop-floor and QC staff; someone has to be available to arbitrate on the question "is this unit acceptable for the customer concerned?" The expansion of the customer base meant that QC staff were not always available and that line staff (especially supervisors) were being forced into making quality decisions, leading to a situation where there was, in the words of one interviewee, 'quality slippage'. This explains the difficulties with the Italian customer; the QC representative had not been available to

arbitrate on standards and the decision was made to 'pass' the units. These were rejected by the customer who complained that they were not of the quality that had been agreed by QC staff. Subsequent discussions at Telco confirmed that the customer was right, the units dispatched did not reach the agreed standard.

The expansion of the customer base thus created difficulties within a context of limited human resources. As one of Telco's suppliers commented, "the QC department is small for the size of the company". Also, the systems themselves must be questioned as the placing of total responsibility for determining quality in the hands of a single person seems, at best, a fragile and high-risk strategy.

The previous two sections have explored Telco's relationships with its buyers and suppliers. The consequence of supply problems and pressure from customers led the assistant managing director to refer to Telco's position as the 'meat in the sandwich'. This position is a consequence of a range of internal and external factors. These will now be analysed using the three categories of social relations: knowledge, reciprocity and identity.

Knowledge

'Knowledge' is a key feature in gaining a degree of control over external contractual relationships. Telco had established a number of systems to help them generate the knowledge to manage their customer and supplier relationships. An exhaustive audit process had been devised to 'weed out' potentially unreliable suppliers. Also, a mechanism for systematic liaison with

customers had been developed to ensure that their needs were met. What is striking about all these systems is the manner in which they failed to generate the knowledge which they were established to provide.

There are a number of reasons for this shortcoming. In some cases it represented a failure to implement systems in the appropriate fashion, as the partial or delayed application of supplier audits exemplifies. The effect, in this case, of the lack of articulation between official procedure and actual practice seems to have been an accidental regression from an audit model of buyer-supplier relations with verification based on ex-ante assessment of suppliers to a demands model premised on ex-post verification (Sinclair et al.1996). While ex-post verification may help resolve short term difficulties it can bring problems of its own especially when, as in the case of Telco, components are used with no pre-inspection. A further reason for the failure of systems to provide the requisite knowledge was that they were inadequately resourced, especially in the context of rapid expansion. This is illustrated by difficulties in meeting agreed standards in the absence of QC staff. Finally, there are occasions when the systems themselves did not appear sufficiently robust, as was the case with the materials tracking system.

There emerged, therefore, a significant disparity between the planned and the actual operation of knowledge-generating systems. While a number of reasons have been identified for this disparity, these can be traced to a common underlying cause, namely a significant failure of management at Telco. These areas of managerial shortcoming can be specifically identified as the failure to build robust information systems, the failure to resource

established procedures effectively and the failure to monitor audit methods adequately. While accepting that management had to cope with commercial decisions over which they had no control, such as the expansion of the local supplier base, there is little evidence to suggest that they have made any adequate response to these problems. Managerial fallibility is, of course, nothing new; Lupton wrote on the topic three decades earlier:

> It is assumed that the main impediment to the fulfillment of management expectations lies in the informal relationships in the workshop. It is not admitted that expectations may not be fulfilled because of the lack of ability by management to translate plans into actual output (1963:187).

This quotation seems particularly pertinent in the case of Telco, given the 'problems' that customer/supplier relations generated on the shop-floor.

Reciprocity

Reciprocity has become increasingly important in buyer-supplier relations. Under 'arms-length' contracting, checks on incoming supplies and the short-term nature of contracts countered the need for significant levels of reciprocity. The move towards obligational contracting with longer term contracts and no pre-inspection creates a situation of high dependency, requiring the establishment of reciprocal obligations if one partner is not to take advantage of this relationship (Oliver and Wilkinson 1992)

The data indicate that the creation of reciprocal obligations was a significant difficulty for Telco, in that they appeared to be in a position of

subservience in relation to their customers, but were unable to exert the same influence on some of their own suppliers. The significance of this position and the difficulties it created for Telco can be illustrated by applying the model of buyer-supplier relations developed by Sinclair et al. (1996), which is shown in figure seven

Figure 7

The Importance of Business Relationships

Customer's importance to supplier		
High	Dependence Leverage	Strategic Partnership
Low	Market Exchange	Dependence Management
	Low	*High*

Importance of Supplier to Customer

Source: Sinclair et al. 1996: 60.

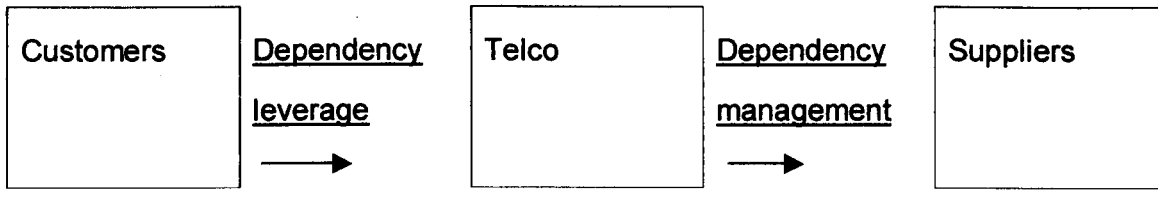
As a supplier, Telco's limited customer base and desire to expand quickly created a situation where the customer's importance to Telco was high. By contrast, it can be argued tentatively that Telco had a relatively low importance to its customers given the power these customers were able to exert over the company and the lengths to which Telco went to retain their

business. This combination of high customer importance to supplier and low supplier importance to customer places Telco in the top left hand cell of the diagram, dependence leverage. This is a position that 'allows the customer to exercise leverage over the supplier' (Sinclair et al. 1996:60).

This is in contrast to Telco's position as a customer, where the need to meet quality standards means that their suppliers can be characterised as highly important to Telco. However, in some cases, where Telco's orders constituted only a small proportion of the suppliers business, or where their suppliers were in an oligopolistic position, then Telco's importance to their customer is low, a combination which places Telco's relationship with its suppliers in the bottom right cell, dependence management. This position is one that for customers 'indicates the need for the dependency relationship to be carefully managed' (Sinclair et al. 1996:60).

Figure 8

Telco's dependency relationships



As figure eight illustrates, this analysis indicates Telco's vulnerable network position. On the one hand they were subject to leverage from customers with whom they had a high dependency, while simultaneously they were in a situation where their relationship with suppliers was one which had

to be carefully managed. But, crucially for Telco, they were unable to manage this dependency relationship with at least some of their suppliers.

This location of Telco at the nucleus of a network of buyer and supplier relationships illustrates the importance of 'market reciprocity'. 'Market reciprocity' represents the extent to which an organisation's obligations and needs are met across relationships with all other trading partners. A characteristic of Telco's position was their inability to generate equitable market reciprocity, as their customers made demands upon them which they were unable to transfer to trading relationships with all their own suppliers.

An example of this unequal market reciprocity is in the disparity between the penalties applied to Telco and those it was able to impose on its own suppliers. If a unit supplied to a motor manufacturer malfunctioned during the warranty period, the motor company would charge Telco for the cost of the replacement unit and the labour involved in replacing it. On the other hand, although Telco was gradually managing to write a similar penalty in the contracts of some of its suppliers, there were still a number of companies that refused to accede to such a penalty. Here the failure to generate reciprocal agreements across the span of its market activities placed Telco at a financial disadvantage.

The significance of unequal market reciprocity extends beyond financial penalties; it was a major factor in explaining the nature of the labour process. The previous chapter has argued that it was the interaction of both customer and supplier relationships, namely, the difficulties caused by poor quality supplies and demanding customers, that led supervisors to tolerate

and conspire in fiddles with operators. Similarly, it was unequal reciprocity that explained managerial manipulation of standards, such as the changing of tolerances. This managerial 'rule-breaking' was used by workers to justify their own circumvention of operating procedures. Also, the production problems that characterised the factory floor and which stemmed, at least in part, from unequal market reciprocity, created a climate of uncertainty which made fiddles easier for the workforce to sustain.

Identity

This section explores the question of identity in relation to the group of Telco's employees most closely involved with buyer-supplier interaction, the staff of the QC department. One significant issue related to identity concerned the role conflict experienced by QC staff. While they were the customers' de facto representatives with a role of ensuring appropriate standards, they were also Telco's employees with a responsibility and interest in ensuring that daily output targets were achieved. This dual obligation was a potential cause of tension when judgments had to be produced on units of marginal quality. If they took a 'hard line' and identified solely with their customers' interests then production could be jeopardized. One member of the QC department observed:

> You're put in a position where a decision is demanded of QC, of the QC department, saying it is OK or it is no good, bearing in mind if these parts don't go out tonight our customer line stops. "Now, you tell me if they're okay or no good". And it's like, all the responsibility is on your

shoulders. If the customer line stops you feel, you're made to feel as if you are the one that has stopped the customer line.

A further tension for QC staff arose from their responsibility for liaison and negotiation with Telco's suppliers. Where problems of faulty parts occurred the QC staff were identified, by production, as the source of the difficulty. As a member of the QC department commented:

> In practice, what happens, you get a batch of parts come through to production, and, as there's no goods inwards inspection, the first time we hear of a problem is when the line stops, or the line is in danger of stopping. So what happens, we get the production manager, pick the phone up, ring us with a very strong phone call saying "The line is going to stop because of your parts. What are you going to do about it?"

The identity of the QC department staff can be summed up in the words of one interviewee who observed that "we're wearing two hats all the time and that can cause tensions". The responsibilities and obligations to Telco on the one hand and customers and suppliers on the other, created a contradictory situation for QC staff, and one where they were viewed, by other departments, as a source of production difficulties.

Summary

Much has been written about the developments of new buyer-supplier networks and claims have been made for their efficacy (IRS 1996), with the phrase 'supply chain management' becoming part of the new business lexicon (Harland 1996). But, as this chapter illustrates, for first-tier suppliers in what is generally perceived as a leading-edge industry, these evolving buyer-supplier relationships are not unproblematic. This conclusion is consistent with other evidence from the UK motor vehicle industry which suggests that although recent developments in buyer-supplier relations have produced some positive consequences for first-tier suppliers, such as the generation of long-term contracts, the major vehicle manufacturers still hold the 'whip hand' in these relationships (Danford 1998a; Turnbull et al.1993).

The analysis of reciprocity has drawn attention to the manner in which Telco's market weakness has caused difficulties in attempting to manage buyer-supplier relations. The difficulties experienced by Telco support the assertions that power relations remain important within evolving systems of buyer-supplier relations (Grabher 1993), and that these power relations cannot simply be reduced to one of supplier subservience (Rutherford et al.1995). The concept of market reciprocity seems particularly important in explaining Telco's difficulties. While their buyers were in a position to exercise dependence leverage, they could not replicate this leverage with all suppliers.

Reciprocity is however only one source of Telco's difficulties. The issue of knowledge illustrated that lack of managerial competence impeded the generation of information which would have helped manage buyer-supplier

relations. Although Telco had many of the systems in place to provide appropriate data, in practice these did not function as required. This illustrates the importance of looking behind formal designations of procedure to investigate processes in practice.

Finally, the issue of identity has been applied to explore the impact of customers on the staff most closely involved with buyers and suppliers, namely members of the QC department. This has illustrates the tensions that role conflict has generated for QC department staff. At a broader level it is interesting to note that QC staff seem to be 'invisible men' (and women) in debates relating to 'Japanisation', meriting, at best, an occasional aside (Roper et al.1997; Taylor et al.1994). It appears to be assumed that the advent of TQM , with the delegation of responsibility for quality throughout the organisation, has negated any significant role for specialist QC staff. The evidence from Telco suggests that this assumption may be incorrect and that the disappearance of QC staff from the Japanisation literature is a significant omission.

Conclusion

This study has presented research on the labour process in a British-based Japanese manufacturing company. It has also set the analysis in the context of embeddedness, thus developing and applying a new analytical framework to workplace relations in Japanese transplants. In seeking to draw conclusions a number of specific questions arise. Firstly, how does the identified framework of embeddedness and the related holistic analysis help to explain the labour process at Telco? Secondly, how do the findings from Telco add to the academic analysis of Japanese transplants, and labour process theory more generally? Finally, what are the issues for future research? This chapter addresses each of these questions in turn.

The embeddedness framework and Telco

Two related aims of this study were to devise an analytical framework for understanding the labour process within Japanese manufacturing transplants, and to develop a holistic analysis of workplace relations. The analytical framework developed to meet the first aim was based upon Granovetter's concept of embeddedness. The framework presented here developed Granovetter's use of embeddedness by specifying four network structures and three categories of social relations and applying these specifically to workplace relations. Turning to the second aim, a 'holistic' analysis is one which includes the actions and motives of all the constituents

within the organisation, workers, supervisors, support staff and managers. Also, a holistic approach demands that the organisation is studied in its wider economic and political context and that the company's product and labour markets form part of the analysis.

These two aims help to develop an understanding of the labour process at Telco. By developing linkages between the various networks structures and categories of social relations it has been possible to track the impact of policies on the labour process, to explore the complexity of forces influencing workplace relations and to account for the seemingly contradictory behaviour.

The 'tracking' of policies refers to the need to explore, rather than merely assume the actual outcomes of policies. Through the embeddedness framework it has been illustrated that the objectives management allocates to policies are not always achieved. Relatedly, the tracking of policies has allowed labour to be reinstated into the labour process in the 'new workplace' as active agents in shaping workplace relations. For example, the discussion of workgroup networks has shown how workers were able to use their knowledge and to engage in reciprocal agreements in order to circumvent managerial intentions concerning surveillance. Although Telco can be described as a high-surveillance workplace workers were able to engage in fiddles to evade surveillance. Tracking policies has also highlighted the conflicts and tensions between policies and the manner in which these have fed through to social relations. To cite an example from personnel networks, the conflict between 'good' HRM practice and the demands of production led

to the constant cancellation of training sessions which, in turn, sent an unambiguous message to the workforce that their knowledge and input was not required. This tracking of policies highlights the dangers of simply inferring the outcome of policies from their managerially-defined objectives.

The connections between the various network structures and categories of social relations has also emphasised the complexity of influences upon workplace relations. For example, it has been established that supervisors play a key role in shaping the labour process through the reciprocal arrangements they developed with operators. Supervisors engaged in these relationships because of the difficulties that they faced due, at least in part, to Telco's inability to exert control over its commercial networks. In turn, the problems Telco experienced in managing relationships within its commercial networks have been attributed to managerial fallibility and unequal market reciprocity. This explanation moves the analysis away from compartmentalized explanations of workplace relations towards a more comprehensive account which explores the inter-relations between different actors and sets these relationships in a broader organisational context.

The framework also allows the seeming inconsistencies of workplace relations to be explored. One example here is the way in which the workgroup offered reciprocal support to most of its members, but in the case of one operator, Dave, this was denied. The motives of the team in excluding Dave from this support were embedded in a tacit view amongst his colleagues of what constituted acceptable levels of attendance, effort and propriety. A further example concerns the manner in which supervisors support some

worker fiddles but try to clamp down on others. This was explained by setting supervisors' actions in the context of the expectations placed upon them and the contingent conditions they faced. By investigating relationships between actors both within and across networks the analysis can move away from broad-brush generalisations about the actions and motives of workers to explain what appears contradictory behaviour.

Telco in context

This section brings together the three aims of the study. It uses data generated through the embeddedness framework and holistic analysis to inform debates concerning workplace relations in Japanese transplants and labour process research more broadly. More specifically this section has three objectives. First, to discuss recent theoretical issues concerning resistance and the labour process debate. Second, to use comparative study to draw some conclusions concerning the relative significance of factors affecting the labour process within Japanese transplants. Third, to offer a critique of a number of perspectives in the Japanisation literature. The section is organised under three headings: the analysis of resistance, management in context and whither Japanisation.

The analysis of resistance

The factory floor at Telco exhibited much of the social and technical organisation of production associated with high-surveillance regimes. It has been claimed that these high-surveillance regimes have effectively eliminated

informal forms of resistance (Delbridge and Turnbull 1992; Sewell and Wilkinson 1993). The evidence from this study challenges these findings. Workers at Telco engaged in resistance by pursuing both individual and collective fiddles in order to make time and evade surveillance. This supports the contention by Thompson and Ackroyd (1995) that workers have retained the capacity to engage in informal action in support of their own interests.

Whilst supporting Thompson and Ackroyd's basic premise relating to the continuation of employee 'misbehaviour', the data from this study progresses their analysis by addressing two shortcomings in their misbehaviour thesis. These two limitations relate to the inadequacies of misbehaviour as a theoretical construct and the authors' neglect of causal analysis of resistance. It is these two issues of labour process theory and the contingent nature of resistance that provide a structure for this section on resistance.

Turning first to the theoretical shortcomings, the point of departure is the concerns raised by Martinez-Lucio and Stewart (1997) in what they describe as the 'paradox of contemporary labour process theory'. This paradox arises from a critique of Thompson and Ackroyd's (1995) initial use of 'misbehaviour' to characterise and understand the oppositional behaviour of workers. Martinez-Lucio and Stewart argue that the notion of 'misbehaviour' underplays the collective nature of employee action and, relatedly, ignores collective labour as a category in favour of the more individualistic term of employee. The data from Telco illustrate both the significance of collective action and the salience of labour as an analytical construct.

Dealing first with the issue of collective action, the evidence from Telco supports the view that worker resistance has not been reduced to individual acts of dissent; collective action was clearly identified as a feature of resistance. Within the workgroup network, workers were able to use their knowledge of the production process collectively to both make time and evade surveillance. Moreover, where individual resistance occurred it was sometimes premised on the collective will and capacity of workers to share their knowledge of fiddles. Workers had become neither atomised nor totally incorporated into a regime of self-surveillance, but had developed a series of reciprocal arrangements within the workgroup to facilitate fiddles. The role of the workgroup in facilitating collective resistance emphasises the necessity for labour process theory to recognise the potential contradictions within managerial initiatives to reconfigure the social organisation of work. At Telco the main managerial purpose of the team seemed to be to act as an instrument of accountability and, as such, of surveillance and discipline. What the team actually provided was a mechanism through which collective loyalties could be constructed and discharged. Even in what is arguably the most barren condition for collective action to germinate, a non-unionised company on a greenfield site, workers have not simply accepted managerial efforts to engineer control through the restructuring of production arrangements. The examples from Telco suggest that workers' capacity for collective action in support of their own interests has not been expunged. The focus on workgroup networks and the accompanying categories of social relations have reaffirmed the significance of collective worker action.

A further outcome of the recognition of collective action is that it helps to explain some of the complexities of workplace relations. In particular, the ways and circumstances in which collective support can be withdrawn from specific members of the workgroup illustrates the manner in which compliance and resistance are interwoven within the labour process. It is not simply a case of associating collective action with resistance per se; collectivist concerns and action can also shape the limits of resistance.

The second key theoretical issue raised by Martinez-Lucio and Stewart is Thompson and Ackroyd's focus on workers as employees rather than more collectively as labour. This, they argue, removes the debate concerning resistance out of its proper location, viz. the wider social relations of the employment relationship. Martinez-Lucio and Stewart contend that resistance is rooted in something more than individual attempts to manipulate the effort-bargain, as is implied by 'misbehaviour'; rather, it needs to be understood in terms of a structured antagonism (Edwards 1986) between labour and capital. The embedded approach has illustrated the manner in which employee resistance is motivated not only by instrumental concerns, but is located in wider issues around management's treatment of the workforce. At one level the analysis of resistance at Telco as strategies to evade surveillance and make time may be seen as reducing resistance simply to action related to the effort-bargain, albeit that these concerns are expressed collectively. However, resistance at Telco was grounded in more than worker self-interest, it was based on and motivated by a broader opposition to management and managerial actions. This has been most clearly illustrated through the manner

in which the personnel network created a lack of trust in management and a view from the workforce that managers rarely considered their interests. This antagonistic relationship was further extended through the autocratic behaviour associated with personal control. The consequence of this antagonistic relationship was that many workers developed an identity which was constructed in opposition to management. Management action became associated with shoddy treatment, lack of concern and commitment and inconsistent and ad-hoc application of policies. In this sense resistance at Telco can be seen as action by labour, not merely because it was collective, but also because it was located in employee experience of social relations in which their value and significance to management was defined solely in terms of their contribution to meeting output. By their own measure employees at Telco were subjects of social relations which confirmed to them their lack of status and significance. This is not to treat worker actions as a proxy for class struggle, but to stress the collective view of workers as labour which should be seen in the context of the structured antagonism that underpins labour process theory.

Having discussed the way in which this study supports and addresses theoretical criticism of misbehaviour, the second major shortcoming of Ackroyd and Thompson's work is now addressed, that of their neglect of the contingent nature of resistance. This criticism stems from the somewhat modest agenda that Ackroyd and Thompson have set themselves in their most recent work. They comment:

> Our purpose is not to re-examine or indeed to create causal explanations for conflict and resistance in the workplace, but to produce a provisional mapping of the misbehaviour that many managers and social scientists have neglected (1999:11).

This overt neglect of the causal explanations for resistance is somewhat surprising given that they also observe 'the real question is how and why the organisation produces misbehavior' (Ackroyd and Thompson 1999:11). The contingent nature of resistance has long been recognised (Lupton 1963), and, while the classification of workplace activities by Thompson and Ackroyd is valuable, ignoring the causal explanations does seem to be evading 'the real question'. It is this issue about the explanation of resistance that is the concern of the remainder of this section. Using the data from the embeddedness framework to compare Telco with the ethnographic studies first of Delbridge and then of Graham, the contingent nature of resistance will be discussed.

Delbridge's work has been referred to extensively in other chapters, so it will be summarised briefly here. In his study of the labour process at Nippon, Delbridge (1998) argues that management has been successful in imposing a regime which has intensified work and increased operator accountability through extensive surveillance; effective worker resistance to this production regime has been marginalised. The key determinant in marginalising worker resistance is the company's ability to isolate the production systems from uncertainty. The 'bounded JIT' system ensured appropriate quality supplies, the technology was reliable and the position of supplier to its own distribution

division provided a stable product market. This is in stark contrast to Telco where the shopfloor was bedeviled by uncertainty. One major source of uncertainty arose from Telco's commercial networks which placed the company at the hub of a network of buyer and supplier relationships, but it was a position in which the company was unable to generate equitable 'market reciprocity'. Whilst being subject to leverage from customers on whom they had a high dependency, they were unable to replicate this dependency leverage with at least some of their suppliers.

This uncertainty was compounded by ambiguities concerning definitions of quality. At Nippon quality systems described by Delbridge were focused solely on functional definitions. The purpose of checking and surveillance procedures at Nippon was to ensure that when the product reached the end of the line, it worked properly. At Telco, standards involved more than mere functional effectiveness; the cosmetic appearance of the unit played a significant part in determining quality. The varying quality standards accepted by different customers added to the element of subjective judgment in the determination of quality. Also, in contrast to Nippon, the uncertainty that surrounded the shopfloor at Telco was further exacerbated by temperamental technology and internal logistical difficulties. The difficulties experienced in meeting output in this context of shopfloor uncertainty produced an operating environment where workers were able to engage in fiddles.

While workers at Nippon functioned within a regime which had marginalised uncertainty on the shop floor, operators at Telco performed within a climate of constant vicissitude. Consequently they were able to prise

open the pores of the manufacturing system in practice and to exploit these tensions and contradictions to their own advantage. These uncertainties helped to facilitate fiddles in a number of ways. Supply problems and production demands led to a situation where workers would take shortcuts and pass marginal units knowing that they were unlikely to be reprimanded for those actions. Also, the lack of clarity concerning the definition of quality meant that operators would make their own decisions on whether to 'pass' of 'report' units of marginal quality, arguing that it was a practice which both supervisors and managers engaged in. The climate of uncertainty at Telco also meant that the supervisor had a key role in facilitating fiddles. The difficulties supervisors faced in achieving their primary task, that of meeting output, led to compliance with workers in circumventing operating procedures. In some instances this compliance involved 'turning a blind eye' to fiddles, in others instances it involved a much more active role through instructing operators to contravene official systems. Finally, the transgression of formal procedures by supervisors and also by managers which arose from production uncertainties, acted as a legitimisation by workers to pursue their own rule-breaking.

One issue that arises from this discussion of uncertainty is the relationship between resistance and a company's market environment. Conventionally, the capacity of workers to engage in resistance has been linked to the company's market position with its buyers, often with fiddles being more difficult for workers to sustain within price-competitive markets (Brown 1973). The evidence from Telco and Nippon suggests a slightly

different approach, that within JIT systems it is the organisation's relationship with both its buyers and suppliers that is a key determinant of worker capacity to sustain fiddles. Where companies operate within a JIT system as a first tier supplier in highly competitive markets, they have to respond not only to demands on price but also on quality and timing of supplies. If, as in the case of Telco, this pressure is compounded by an inability to control the quality of incoming supplies, it creates an environment in which worker rule-bending is both more likely to occur and also more liable to be condoned.

More broadly, this comparison between Nippon and Telco illustrates that surveillance systems embodied in the technical and social organisation of production do not in themselves eliminate resistance. The conditions of production in which control systems are embedded are fundamental factors in facilitating or disabling resistance. This supports arguments which caution against an approach to workplace relations that is based upon technological determinism (Wilkinson 1982).

A further distinction between Nippon and Telco concerned the actions of operators in using their tacit shopfloor knowledge to make time by shaving seconds off operating procedures. Delbridge argues that at Nippon any such knowledge was appropriated by the supervisor who would use this to 'tweak up' line speed in order to achieve the targets set by management. Supervisors at Telco certainly did use operators' capacity to complete tasks under the standard time as a way of meeting targets, indeed they sometimes instructed operators in these fiddles. But, this knowledge was certainly not appropriated totally by the supervisor. In many cases, such as the examples of the heating

process and the 'lumo' room, workers themselves remained the beneficiaries of their own shopfloor knowledge. The difference between Nippon and Telco is not easily accounted for, as in both companies supervisors and operators were subject to management pressure to achieve targets. One tentative explanation for the difference is again linked to the differing degrees of uncertainty that characterised the shopfloor in the two companies. Although the supervisors at Nippon were under pressure to achieve targets, the smooth running of the production system meant that they were not forced into informal accommodations with the workforce on a day-to-day basis (Delbridge 1997). At Telco by contrast, supervisors relied on the active engagement of workers in fiddles to meet output, and in this situation it makes sense to leave workers some latitude to engage in fiddles that were not counter to the supervisors' interests. Turning a 'blind eye' in these circumstances means that supervisors do not antagonize staff upon whose co-operation they rely.

Two key points arise from this discussion of operators' tacit shopfloor knowledge. First, despite the Taylorisation of work as manifested in the timing of jobs, the identification of the 'one best way' (as embodied in the work standards) and the fragmentation of operations so that tasks lasted less than half a minute, workers retained some ability either collectively or individually to make time. Worker ingenuity has not been engineered out of the production process. Second, the ability of workers to benefit from their tacit knowledge seems to be linked to worker-supervisor relations. This adds further evidence to support the view that the role of the supervisor is central to understanding and determining workplace relations.

The contrast between Telco and Nippon has raised key issues concerning the contingent nature of resistance. This analysis can be extended by comparing Graham's data from Subaru (Graham 1994; Graham 1995), with both Nippon and Telco. One significant difference between Nippon on the one hand, and Telco and Subaru on the other is the generation of vertical conflict as evidenced in operators' attitudes towards management. Delbridge contends that although workers at Nippon distanced themselves from management, the workplace was not characterised by operator hostility towards management. This was certainly not the case at either Telco or Subaru; in both companies worker attitudes towards management were characterised by mistrust and antagonism.

At Subaru, worker hostility towards management was the consequence of the physical stress of the JIT system and the perceived difference between the 'promises' made during training and induction and the reality of life on the line. Workers felt that they had been both exploited and misled by the company, and these grievances set the foundations for worker resistance. At Telco, worker distrust of management stemmed from somewhat different root causes. This was not grounded in complaints about physical injury or the pace of work, but was focused on the operators' perceptions of the way in which they were (mis)treated. The autocratic personal control of the production manager and the arbitrary implementation of sanctions created an atmosphere of anger and antagonism towards management. Similarly, the cancellation of the company council, training sessions and kaizen schemes was interpreted by operators as a signal that management had little time or

use for employees' views and opinions. Neither the formal nor the psychological contracts were being fulfilled, generating a situation where workers created an identity which was couched in terms of opposition to management.

At Subaru, this employee hostility towards management directly influenced employees' strategies of resistance. In the case of Telco, it is more difficult to demonstrate, in the sense of drawing an undisputable causal link, that antagonism towards management was a significant contributory factor in promoting resistance. Making time and evading surveillance were not directly attributed to the discontent with management that was articulated by many workers. Or, put another way, it cannot be proven that if worker perceptions of management had been less hostile then resistance would have diminished. However, what can be categorically stated is that from the point of view of the majority of the workforce a 'them and us' attitude prevailed. Not only was there no evidence of any willing commitment by the workforce to management goals, management were clearly identified as unreasonable, unsympathetic and lacking care and consideration. Using a worker's words, Telco was 'a shit place to work' and the reason for this was that management made it so. In this situation it does not seem unreasonable to offer the conjecture that due to the way they were treated workers would seek to pursue their own interests and engage in activities that ran counter to managerial diktat. In this way it can be argued that worker hostility to management was a motivating factor in generating resistance.

A further point of comparison between Telco and Subaru is the nature of resistance in the two companies. In the case of Telco resistance took the form of fiddles; at Subaru, by contrast, workers also engaged in more direct confrontational acts against management. One tentative explanation for this difference is that because workers at Telco were able to use fiddles to 'get by' and exert some control over their working day, then more direct conflict with management was avoided. But, at Subaru, antagonism towards management coupled with a seeming restricted ability to engage in fiddles may have stimulated more overt and direct conflict.

From this discussion of Telco, Nippon and Subaru some conclusions can be drawn about what conditions promote or restrain resistance. One tentative line of analysis is to divide this question into two separate but related issues, why workers resist and how this resistance is achieved, and then to explore factors relating to each of these sub-issues. The factors explaining how workers are able to resist can be termed 'enabling' factors whilst those explaining why workers resist can be termed 'motivational' factors.

Turning first to enabling factors, a comparison of Nippon and Telco identified the degree of uncertainty that characterised the factory floor at Telco as they key factor in enabling fiddles. This uncertainty stemmed from Telco's inability to establish equal reciprocal dependency within its commercial networks, unreliable technology, the failure of internal systems and the ambiguous definition of quality. With reference to the second category, motivational factors, Subaru and Telco were both characterised by employee resistance and worker antagonism towards management,

suggesting that hostility towards management may explain why workers resist. The comparison between Telco and Subaru also indicates tentatively that where motivational factors are present but enabling factors to permit fiddles are absent, then the outcome is more direct confrontation.

So far this section has focused on resistance, but the limits of this resistance also need to be recognised. The study has established that workers' behaviour also constituted compliance through the ways in which they 'policed' the actions of both their workmates and supervisors. The non-support of Dave and the demand that supervisors countersign defective units are illustrations of the manner in which boundaries were drawn around fiddles. The structures that supported fiddles, both within the workgroup and through operator supervisor collaboration, can similarly be mechanisms of compliance. Compliance therefore co-exists with resistance. Moreover as Collinson (1993) observes it can stem from the very same practices.

In discussing resistance and compliance at Telco one further key issue needs to be addressed, namely the significance for patterns of workplace behaviour of Telco's location as a first-tier supplier. It has been argued that Telco's relationship with its customers represented a position of 'high dependence' and that Telco struggled to meet the twin targets of JIT scheduling demands and product quality. The tensions arising from this high dependency 'fed through' to the labour process in ways which influenced both resistance and compliance.

Turning first to resistance, the primacy accorded to meeting output helped to facilitate worker fiddles. For example, workers were aware that

official quality standards were manipulated by supervisors and managers in order to achieve daily targets and so developed their own initiatives to circumvent quality standards, in order to make time and avoid surveillance. The actions of the end-of-line supervisor in doctoring the QC sample provides one instance of such practice. Furthermore, the pressures on the supervisors to achieve daily targets explains why they conspired with operators, in some cases in contravention of formal operating procedures. The priority allocated to daily output targets also influenced personnel practice in that it was cited as the reason for the continued cancellation of training sessions. This, in turn, was seen by the workforce as one of a number of examples where they were accorded a low priority by the company, and which contributed to the creation of an anti-managerial ethos amongst many of the workers.

Telco's relationship with its customers also helps to explain compliance as well as resistance. The boundaries that were drawn around fiddles were, at least in part, a consequence of the manner in which customer demands impacted on the factory floor. For example, workers' insistence that supervisors sign units of marginal quality usually resulted in these units being consigned for rectification, as per formal operating procedures. It was the unwillingness of workers to risk being blamed for ignoring customers' quality standards that underscored this compliance with company standards.

The demands of customers thus influenced the labour process in an informal manner (Kinnie et al. 1998). This interaction between labour process and the influence of powerful customers is consistent with other studies of first-tier suppliers in the motor vehicle industry (Danford 1998a, Stephenson

1996). However, it is important not to reduce this relationship to one of a pre-determined trajectory. In some cases the demands of powerful customers gives employees leverage to exert some control over the labour process. For example, at Ikeda-Hoover a strong union and skilled workforce were able to extract concessions from management (Stephenson 1996). In other instances management are able to use the threat of customer power to intensify work, as Danford's (1998a) study of CarPress illustrates.

This raises the question of why customer pressures impact upon the labour process in different ways. One tentative explanation is in the interaction between labour markets and customer pressures. At both Telco and Ikeda-Hoover, workers were in a relatively strong position, albeit for very different reasons: the existence of skilled workers at Ikeda-Hoover and the buoyant local labour market in the case of Telco. In the case of CarPress, workers faced a situation of employment insecurity in a geographical area of diminishing work opportunities. Employment levels at the plant had fallen by almost two thirds over the last two decades, and management threatened workers with further job losses if they failed to meet customer requirements. In this situation employees are more likely to accede to task accretion and less able to engage in acts of resistance. This line of analysis is somewhat speculative, although it is supported by case study evidence from outside the motor vehicle industry (Newsome 1996). Future research would be helpful in clarifying the interaction between customer-supplier relations and the labour process in first-tier suppliers.

In summary, the evidence from Telco suggests that workers retained the capacity to engage in resistance, although this was interwoven with compliance. The capacity to engage in fiddles stemmed mainly from the uncertainty that pervaded the factory floor. The motivation for fiddles arose not merely as a way of manipulating the effort bargain and evading surveillance but also from a mistrust of management by workers generated by the manner in which they were treated.

Management in context

It is axiomatic that management will have an impact on the labour process, the question is what this influence is and how it is transmitted. One of the significant findings of this study is the key role of management incompetence. This was evident through the manner in which production difficulties stemmed from supply problems and internal systems malfunctions. Whilst recognising that Telco's difficulties were not all of their management's making and also that management had, at best, limited control over some policies, the company's problems were also the consequence of managerial failure to support and monitor organisational operating procedures. It was these production difficulties that created a climate of uncertainty which allowed workers to engage in fiddles and also pushed supervisors into accommodations with operators. A further managerial shortcoming was the inconsistent application of personnel policies, which, at least in the opinion of many operators, led to unfair censure. This seemingly arbitrary

implementation of policy created a climate of mistrust of management on the factory floor.

This issue of management incompetence is not raised as a celebration of the failure of agents of capital, but as an attempt to add balance to debates concerning Japanese management. The failings of management should not be surprising, as management is a complex process that attempts to resolve competing demands and address complex problems; managers are often less than strategic in their attempts to solve ongoing tensions and difficulties (Hyman 1987). There has however been a tendency to either 'deify' Japanese management (Pascale and Athos 1982) or endow them with an omnipotence which suggests that their policies are both coherent and successful (Sewell and Wilkinson 1992; Wickens 1987). It is possible that Telco is different from powerful Japanese transplants such as Nissan, because of the extent of uncertainty that it faced; uncertainties which crated significant difficulties and pressures for Telco's management. However, the difference may be one of degree rather than substance, for management fallibility (or at least tensions and contradictions) may found to be more extensive than currently implied by the literature when more studies look for it. This assertion is supported by a small number of cases which suggest that managerial incompetence is not restricted to Telco alone (Grant 1996; Taylor et al.1994).

Management had a further impact on the labour process through the control strategies adopted. The surveillance systems certainly shaped employee behaviour, but, rather than acting to secure compliance, they were in many instances the focus for worker resistance. Also, surveillance systems

did not generate lateral tension, as suggested in some accounts, but quite the opposite, as evading these systems often proved the rationale for co-operation between workers. Moreover, not only did surveillance systems generate lateral co-operation, they also sustained some degree of vertical co-operation between workers and supervisors. Supervisors were themselves the subjects of surveillance and monitoring. One way in which they were able to alleviate the impact of these systems was to conspire with workers to 'doctor' the information that management received.

Management control systems also played a role in the generation of antagonistic workplace relationships through the personal control strategies employed by the production manager. Delbridge (1998) argues that at Nippon the efficacy of the monitoring and control systems negates the arbitrary exercise of authority in the form of personal control. The data from Telco challenge the generalisability of this interpretation. Notwithstanding differences between the two companies, the monitoring and surveillance mechanisms in both Telco and Nippon produce a significant amount of quickly and readily available data. This can be used to facilitate personal control should management chose to follow this option. That is not to argue that personal control will be a feature of all high surveillance organisations, nor that it was a characteristic of Nippon, but that high surveillance and personal control can be complementary rather than conflicting strategies.

One issue that arises from any study of management and workplace resistance is the extent to which management were aware of workers' actions. At Telco there is evidence to suggest that fiddles occurred with at least the

knowledge and tacit approval of some members of management. The British senior production manager had 'risen through the ranks' from supervisor to his current post. Given that supervisors played a key role in many of the fiddles, it seems unlikely that he was unaware of these practices. In addition, operators were more stringent in applying quality standards when Japanese managers were 'patrolling' the shopfloor than was the case with British managers, This was based on the common perception that British managers were more likely to turn a 'blind eye' to fiddles, while their Japanese counterparts insisted on official procedures being observed.

This raises the question of why management allows worker fiddles to continue. One way to address this issue is to consider the effect of a campaign by management to 'clamp down' on fiddles. At Telco the likely consequence would be that without fiddles the daily production targets would not be met. If, for example, workers were to query every unit of marginal cosmetic quality, then the company would have neither the staff nor stock of parts to meet customer's demands. Managerial tolerance of fiddles at Telco would support the long-established conclusion that worker resistance is not necessarily contrary to the interests of capital (Burawoy 1979).

But, whilst recognising that management may gain from fiddles, it is important not to adopt the purely functionalist view that fiddles operate at all times to support capital and the interest of management. This functionalist account of workplace relations underplays the complexity of worker-management interaction and 'spirits away' both practical problems that may face management arising from fiddles and the ideological conflict that

underscores them. At Telco fiddles were not always in the interests of management, as evidenced by attempts to impose control over 'cleaning up' time. Moreover, as argued above, fiddles were employed by operators within an ideological terrain of mistrust of management. They had been devised both with and without managerial and supervisory compliance and had ossified into the unofficial shopfloor practices of all operators. This suggests that operators had established some tentative control over their right to engage in fiddles, irrespective of tacit approval by management. Put another way, it is not certain that management, even if they had wanted to, could have eliminated fiddles successfully. In this sense viewing fiddles as simply in management's interests is unacceptable because they involved workplace behaviour over which management had limited control.

A final conclusion relating to management is that significant tension seemed to exist between different functional groups of managers. Conflict arose between the production and personnel department, amongst managers of shop-floor and 'white collar' workers and involving quality control and production managers. Again, this is a picture which differs from the coherent and relatively unproblematic implementation and operation of policies portrayed in some accounts (Trevor 1988; Wickens 1987). Nor is it simply a contrast in managerial styles and expectations between Japanese and indigenous managers as reported in some transplants (Broad 1994b; Grant 1994); the conflicts identified were all between British managers. Most of the managerial tensions arose out of the difficulties associated with meeting targets and production uncertainties. Managerial conflicts also arose however

from seemingly unproblematic policies and issues such as those surrounding single status. The significance of these tensions was felt beyond the ranks of managers themselves as the conflicts helped to shape the labour process. For example, the continued cancellation of training at the insistence of the production department acted to sustain employees' negative opinions of management.

In summary, management have made an impact upon the labour process but not in the manner identified by advocates of Japanisation nor, indeed, by many of the critics. Telco's situation does however bear strong similarities to the case of Renco, another British-based Japanese transplant (Grant 1994; Grant 1996; Grant 1999), where managerial shortcomings and the inconsistent application of personnel policies led to an environment in which workers pursued their own interests and held a very negative view of management. Telco, therefore, cannot be simply written off as a sole example of managerial fallibility within transplant companies. More generally, the findings from Telco bring into question the lack of recognition of managerial dilemmas, shortcomings and failures which has permeated the Japanisation literature. They also suggest that a more critical perspective on managerial fallibility needs to be employed in future research.

Whither Japanisation?

This section considers the evidence from Telco in the context of a number of perspectives on Japanisation. The data present a very different view from those accounts of Japanese transplants that have stressed synergy

between personnel and production policies (Oliver and Wilkinson 1992; Reitsperger 1986; Trevor 1988). The argument that there is congruence between personnel and production policies is premised on the supposed 'high-dependency relationship' between management and labour. In this analysis companies rely on workers for a creative input into the production system and this is guaranteed through a personnel policy that stimulates commitment, with institutional arrangements such as company councils acting as proxies for terms and conditions operating in Japan. At Telco, management's dependency upon the workforce was limited in the main to a requirement for the operators to turn up regularly and on time. Although there had been some attempts at consultation and involvement, these had atrophied, echoing the findings of Delbridge that workers were merely 'a pair of hands'. Even the more modest claims that work in Japanese transplants represents some form of democratic Taylorism (Adler 1993) seem little more than wishful thinking. Moreover, despite this limited dependency upon the workforce, personnel and production policies could not be characterised as in synergy, quite the opposite in many instances. On issues as diverse as recruitment, training, sick pay, bonuses and single status, there was a tension between personnel policies and practice and the demands of production. In sum, this study adds to the literature that suggests it is inappropriate to view the policies of transplants as necessarily possessing functional synergy (Grant 1996; Elger and Smith 1998). The Japanese company abroad is as likely to be characterised by inconsistencies between policies as by coherence.

One consequence of the contradictions between personnel and production policies at Telco was that policies were amended over time, a feature which has been referred to in chapter four as 'the process of adjustment'. This process of adjustment develops the Japanisation debate beyond analyses which focus simply on the extent of initial transfer of indigenous policies, which are often premised on management's capacity to strategically 'cherry-pick' appropriate policies that cohere to produce a strategic hybrid organisation (Abo 1994). The concept of adjustment recognises that a more fluid, problematic and contested organisation is the outcome of transfer. 'Fluid', because policies evolve and mutate, so that the initial transfer of policies is merely one stage in an organisation's 'life-cycle'. Thus, the policies which a company pursues several years after 'start-up' may not be those that were initially introduced (Leopold and Hallier 1995). 'Problematic', because bundles of policies contain their own internal contradictions stemming from the competing priorities of different functional specialisms and from commercial pressures. Thus, what might constitute 'good' HRM practice will not necessarily meet the demands of production. 'Contested', because workers are not mere recipients of policies, but are active agents in shaping shopfloor relations.

It may seem obvious that organisations adjust over time, but it is a point worth making given that, with a few exceptions (Wilkinson and Ackers 1995; Elger and Smith 1998), research has failed to address the issue of amendments to policies in Japanese transplants, thus presenting a static view. Moreover, even when adjustment is recognised there is a tendency in

some accounts to celebrate this as a reflection of managerial 'best practice', with change being the consequence of a careful evaluation of current policies and resultant amendments stemming from a process of thorough consultation (Doeringer et al.1998). This interpretation may be correct in some instances, but it is certainly not the case at Telco. Adjustment appears to be an on-going process of ad-hoc decision-making driven primarily by the need to respond quickly to specific problems, rather than a strategic or coherent process. To use the terminology of Doeringer et al. Telco seems more 'hodgepotch' than 'hybrid'. The implications for the Japanisation debate are that company policy is not the consequence of one-off decisions regarding transfer. Also, crucially, the process of adjustment is not necessarily strategic or coherent but is a (sometimes piecemeal and short-term) response to the organisation's commercial environment, to inter-departmental tensions and to the activities of labour. Adjustment must, therefore, be contextualised within a wider economic and social framework, and the potentially contested nature of both social and commercial relations needs to be recognised.

A further interpretation of Japanisation sees it in essence as representing an extension of managerial hegemony as a high surveillance regime (Morris et al. 1993; Proctor and Ackroyd 1998; Sewell and Wilkinson 1992a). There is some, albeit limited, support for this view from this study. Operators at Telco were subject to extensive surveillance, and one of the major differences identified between Telco and UMEC, a case study conducted prior to the potential influence of Japanisation, was the extent of shopfloor scrutiny. There are however a number of caveats to be added to this

interpretation. One caveat is the need to decouple surveillance and control from work intensification per se. Proponents of the high surveillance interpretation have invariably associated managerial strategy with an intensification of work effort. The evidence from Telco suggests a more complex picture. There was some closure of the porosity of the working day. For example, bell-to-bell working meant that operators were on the factory floor for all their specified working time. However, in relation to the pace of work, by the operators' own admission it was not unremittingly harsh. It varied with the workstation and the model involved. Certainly there were no instances of workers having to work 'down the line' to insert parts because they could not complete their tasks in the allocated time, as has been reported in some studies (Fucini and Fucini 1990; Graham 1995). This difference between Telco and these studies has two possible explanations. First, as different Japanese companies based in their indigenous environment have varying levels of work intensity (Cusumano 1986), then it seems reasonable to assume that transplants will also exhibit that pattern. Second, surveillance and control systems in different companies might not have the same objectives. The surveillance systems at Telco were, in the main, directed at ensuring product quality. While this is somewhat ironic given the circumvention of these systems by staff at all levels in the company, it does indicate a requirement to move away from a pre-judged linkage between surveillance and work intensification.

A further caveat to the high surveillance interpretation is that a distinction needs to be drawn between policy intention and outcome; high

surveillance strategies do not always achieve the goals set for them by management, as the evidence from Telco illustrates. Workplace relations cannot simply be abstracted from their social context and reduced to a bundle of techniques, or managerial intentions, but they need to be understood and researched as a contested terrain in which workers are not mere recipients of managerial diktat but active agents in shaping life on the factory floor. Thus while the concept of Japanisation as high surveillance has value as a description of the procedures and (given the reservations discussed in the previous paragraph) of managerial intentions, it tells us little about the processes of implementation.

So, what assessment can be made of Japanisation as it applies to Japanese transplants? First it needs to be recognised that policies of Japanese transplants are not always successful, and, as others have argued, cannot be seen as a universal manufacturing panacea or a 'one best way' (Elger and Smith 1994; Stewart 1998). It is as important to view the policies of transplants as much through their contradictions as their coherence. Second, and relatedly, it is important to look beyond transfer as the policies of Japanese transplants evolve over time. This corporate mutation is driven by commercial exigencies and also the active involvement of workers in the labour process. Third, the continuities with previous production regimes need to be recognised. Workplace relations, in Telco at least, bear a significant similarity to cases reported several decades earlier. Moreover, management have certainly not resolved the 'problem' of worker behaviour as implied by studies which stress either the generation of mutual commitment or the

demise of resistance. That is not to say that nothing has changed; Japanisation can be associated with heightened shopfloor surveillance and changing buyer-supplier relations stimulated by the demands of JIT. But, crucially, the outcomes of these policies cannot simply be read off from their existence. Rather, the outcomes of the policies of Japanese transplants are rooted firmly in the individual company's social and economic context.

Of the future

In this final section some issues which should be part of a future research agenda are discussed briefly. The findings from this study highlight several lines of enquiry for future research on developments in the labour process. The first point is that studies must continue to write labour, both individually and collectively, into accounts of workplace relations. That is not to claim that resistance will be a feature of every factory floor, but that in circumstances where resistance may have been marginalised, this has to be explained in a rigorous manner, rather than merely being 'read off' from accounts of managerial practice.

Second, the policies and practices of companies need to be explored in terms of their inconsistencies as well as their coherence. Inconsistencies here may represent the manner in which the objectives of managerial policies can be reinterpreted by workers in their own interest. Inconsistencies can also arise from tensions between the needs of different functional areas within an organisation and from managerial fallibility. Furthermore, the manner in which

these inconsistencies feed through to the labour process needs to be discussed and recognised.

Third, a holistic approach to labour process analysis needs to be adopted. In explaining the complexity of workplace relations the behaviour and motives of all actors workers, supervisors, management and those with specialist functions such as quality control all need to be identified and discussed. Moreover, this holistic approach must also include issues external to the point of production, and in particular an organisation's relationship with its buyers and suppliers. While the relative influence of these features will vary between companies, it is important that the potential significance of these factors is not discounted.

A further distinct, but related way in which the future research agenda might be shaped is to develop the embedded approach posited here, by considering how it might be extended beyond this study. This can be undertaken by applying the embeddedness framework to indigenous organisations and to companies in other sectors. It would also be interesting to explore the framework within a unionised environment or one in which issues of race or gender are more apparently significant.

If the embeddedness framework can provide a rigorous analytical tool for discussing and explaining the labour process in workplaces in the twenty first century, than this study will have achieved its main objective. It is my belief that it can, but it is for others to judge.

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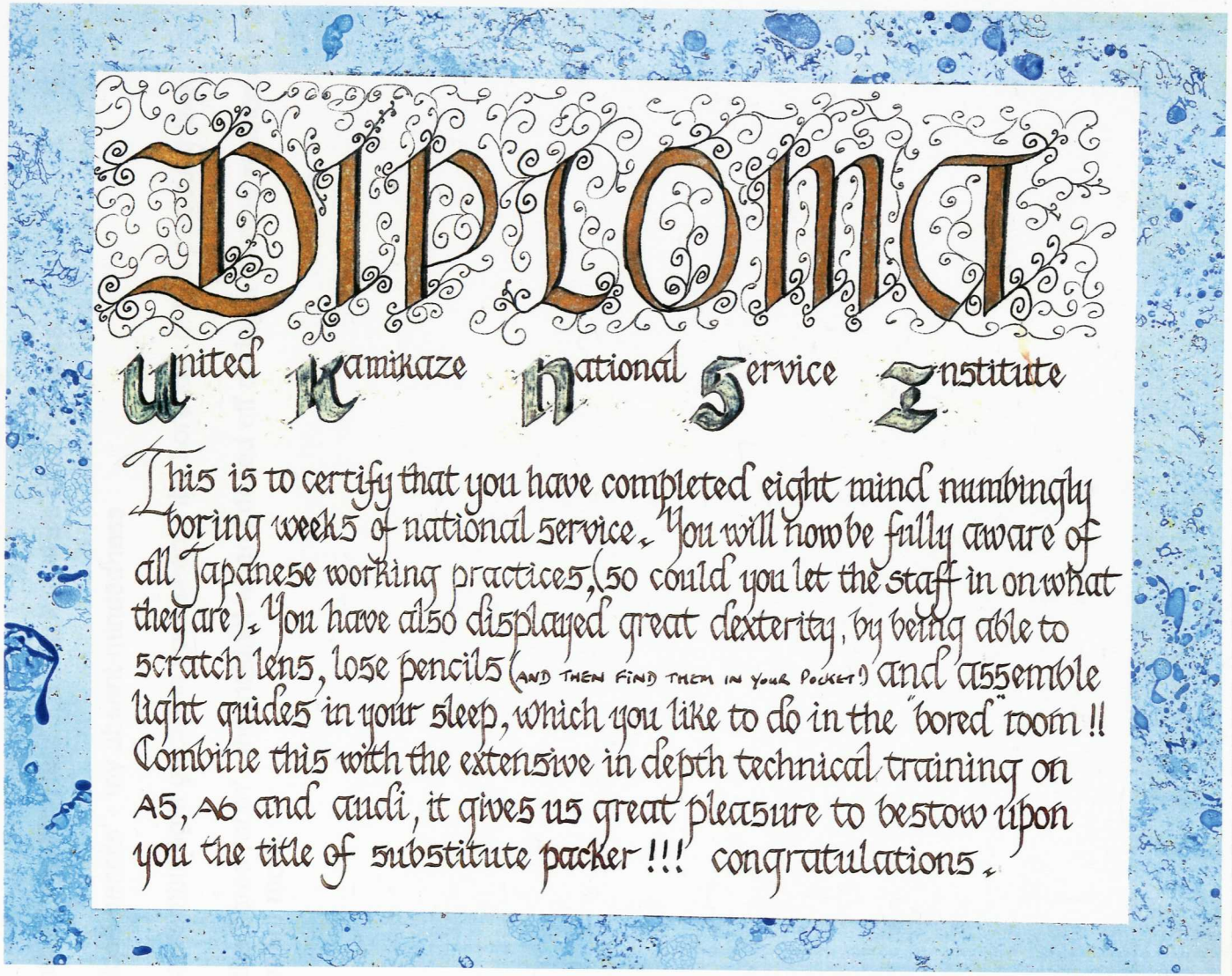
APPENDIX 1

MY LEAVING 'DIPLOMA'


DIPLOMA
United Kamikaze National Service Institute
This is to certify that you have completed eight mind numbingly boring weeks of national service. You will now be fully aware of all Japanese working practices, (so could you let the staff in on what they are). You have also displayed great dexterity, by being able to scratch lens, lose pencils (AND THEN FIND THEM IN YOUR POCKET!) and assemble light guides in your sleep, which you like to do in the "bored" room !! Combine this with the extensive in depth technical training on A5, A6 and audi, it gives us great pleasure to bestow upon you the title of substitute packer !!! congratulations.

Decoding the Diploma

The detail in sentence three refer to the following:

'able to scratch lens' - my lack of skills in some tasks

'lose pencils' - my absent-mindedness

'assemble light guides in your sleep' - the boredom of that particular task

'the bored room' - the incident when I dozed off during a training session in the board room.

APPENDIX 2

COMPANY MEMORANDUM: MISCELLANEOUS ITEMS REQUIRING CLARIFICATION

YOUR REF NO:

OUR REF NO:

DATE: 18 November 1994

PAGE:

MISCELLANEOUS ITEMS REQUIRING CLARIFICATION

1. COMPANY UNIFORM

It is Company policy that all Employees wear the full Company Uniform. Failure to do so will result in disciplinary action being taken.

It should be noted however, that there is no objection to employees wearing the Uniform to and from work, although all employees should wear outdoor shoes outside the premises and change into trainers or other suitable soft-soled footwear on entering the building.

2. CLOCKING IN/OUT TIME ALLOWANCE

There is no time allowance for clocking in/out as there is in some companies (e.g. 3 minute change of clothing allowance - after official start time/before official finish time, etc.)

The official start time at present is 8.00 am and finish time is 4.30 pm (2.45 pm on Friday). Clocking in after 8.00 am and before finishing time is subject to the quartering rule and treated as 'time lost'.

3. RADIO

Radios are not allowed in any of the working areas in the factory. Background music would be a distraction in certain areas, and therefore Company policy is not to allow music to be played during working hours.

4. SMOKING/CONSUMPTION OF FOOD & DRINK

It is Company policy that smoking be restricted tothe Canteen only in the specified area. Food and drink should also only be consumed in the Canteen.

5. SHOP FLOOR OPERATORS - REQUIREMENT TO STAND AT WORK PLACE

It is Company policy that all Shop Floor Operators stand at their work bench/machine during working hours. No seating will be provided.

Only in exceptional circumstances (such as pregnancy) will seating arrangements be considered.

6. PERSONAL TELEPHONE CALLS

Personal telephone calls will only be put through in cases of extreme urgency, otherwise messages will be taken and passed to employees. This policy has been introduced to avoid interruption of work, especially on the production line.

7. FRONT CAR PARK

It should be noted that the car park at the front of the building is for the use of visitors and for cars to be used on company business only. All employees should therefore park their vehicles in the Employee Car Park situated at the rear of the premises.

8. CARS PARKED IN EMPLOYEE CAR PARK

Cars parked in the Employee Car Park are parked at 'Owners Risk', i.e. any damage/theft of parts of car/the car itself should be dealt with through the individual's insurance company. will only be held responsible for damage incurred as a result of the Company's own negligence. (N.B. It should be noted that activity on the rear car park is monitored by close circuit T.V. to serve as a deterrent to intruders).

9. THEFT OF PROPERTY - GENERAL

Employee's personal property is left on the premises at 'Owners Risk'. The Company will not be held responsible for items which go astray. A locker is provided for each employee to store all personal effects.

10. PROBATIONARY PERIOD

There is a 13 week Probationary Period for all employees. At 10 weeks of the Probationary Period having been completed, a review is made by the employee's Supervisor of attendance/performance to date. If review is satisfactory, no action is taken. If unsatisfactory, employee's probationary period may be extended or other action, as deemed necessary by the Supervisor, may be taken.

APPENDIX 3

CHANGES IN EMPLOYEE SICKNESS BENEFITS

(e) If you are absent owing to illness or injury when your annual holiday falls due, you may, at the discretion of your Departmental Head, be permitted to take it some other time in the holiday year, provided you have complied with the requirements of the Sick Pay Scheme set out below. (see para 6).

(f) You are entitled to the following Bank Holidays (or to other agreed days in lieu):-

New Years Day
~~Good Friday~~ Easter Monday
~~Easter Monday~~ Easter Tuesday
May Day
Spring Bank Holiday
Summer Bank Holiday
Christmas day
Boxing Day

+(g)

6. ABSENCE THROUGH ILLNESS OR INJURY SEE APP.1 20/3/92

(a) The sick pay year commences 1st January.

(b) Other than any entitlement you may have to Statutory Sick Pay or National Health Insurance Benefits, you will not be entitled to any pay for any day you are absent from work as a result of illness or injury during the first 26 weeks of your employment with the Company.

(c) In the balance of the sick pay year in which you complete 26 weeks service your coverage for sick pay will be in the ratio that the period from the completion of 26 weeks service to the next succeeding 31st December bears to one year. This ratio will be applied to the coverage of 9 weeks.

(d) Thereafter the Employer will pay you for each day in any sickness period up to the entitlement corresponding with your length of continuous service as shown in the table below:-

SICK PAY YEAR IN WHICH YOU COMPLETE THE FOLLOWING PERIODS OF CONTINUOUS SERVICE	SICK PAY COVERAGE
1 to 3 years	9 weeks
3 to 4 years	12 weeks
4 to 6 years	15 weeks
6 to 8 years	18 weeks
8 to 9 years	20 weeks
9 to 10 years	22 weeks
10 and above	24 weeks

After your period of paid sickness absence for any year ends, or indeed it is necessary that you return to work for a continuous period of at least 7 weeks before you can requalify for Employee sick pay in the succeeding year.

(e) Payment for a sickness period will be a sum equal to your normal salary for a period less a sum equal to the total of Social Security or Statutory Sickness Benefit to which you may be entitled for that period-but the Employer may pending determination of the Social Security or Statutory Sickness Benefits to which you are entitled, or pending receipt of those benefits, pay you at such rate as the Employer considers appropriate.

You are not entitled to payment for any period in which you are unfit for work because of illness or injury caused wholly or partly by the act or default of any other person where the act or default is covered by policy of insurance. The Employer may, however, advance you sums by way of loan for that period and you must repay to the Employer any sums advanced to the extent that you are able to recover for loss of earnings for that period. The Employer may at its discretion require repayment of any such loan in the event that you do not recover in whole or in part any sum from a third party.

(f) Subject to compliance with these conditions sick pay will be payable up to a maximum of twenty eight weeks in any one year.

(g) A "sickness period" is any one of the following:

(i) a period in which you are medically certified as being unfit for work.

(ii) a period (not exceeding three calendar days in total) in which you are unfit for work owing to illness or injury, are not medically certified as being unfit, but have certified yourself as having been unfit for work, on your return to work.

(iii) a period in which you are attending by appointment for Hospital Out-Patient or Clinic treatment, for the purposes of sickness entitlement, such periods will be deducted for on a minimum of half-day per occasion.

(iv) a period in which you are unable to work owing to your contact with a medically certified infectious disease.

(v) a period (not exceeding 4 days) in which you are absent from work owing to the death of a member of immediate family.

(h) In determining whether, at what rate and for what period you are entitled to Statutory Sick Pay or to National Insurance Benefits:-

(i) you will be deemed to have fulfilled all procedural provisions of the National Insurance and related Acts.

(ii) you be deemed fully to have satisfied the contributions of the National Insurance and related Acts; and no account will be taken of any exemption from liability to pay contributions.

(iii) the Employer's decision made in good faith will be conclusive.

(iv) "National Insurance and related Acts" means the National Insurance Acts 1965 to 1971, the National Insurance (industrial injuries) Act 1965 to 1971, the Social Security and Housing Benefits Act 1982 and all other legislation for the time being, which provides for the payment of sums to an employed person, being sums paid periodically and in respect of a period in which such person is incapable of work, or is deemed to be so incapable.

(i) "National Insurance Benefits" mean such sums as are payable as aforesaid and pursuant to National Insurance and related Acts.

(j) You must comply with the Employer's requirements set out below as to informing the Employer of a sickness period, as to providing the Employer with appropriate self-certification, medical certificates or appointments cards, and as to providing the Employer with evidence of your entitlement to, or receipt of National Insurance Benefits.

(k) The Employer may require you to be examined by a doctor appointed by the Employer at any time.

(l) Except as provided in this paragraph and in paragraph 5 (Holidays) you are not entitled to any payment for any period in which you are absent from work.

7. ABSENCE PROCEDURE

If you are absent due to illness or injury you must:

(a) On the first day of absence, and as soon as possible, inform the Personnel Department.

(b) If your absence was of less than three calendar days, you must on your return to work report to the Personnel Department, or your Departmental Head, and deliver a written notice setting out why you were absent. Failure to do so or failure to provide a reasonable explanation will result in your absence being treated as "unauthorised" and could lead to disciplinary action being taken against you and loss of sickness or other benefits.

(c) If your absence extends to seven calendar days or more, you must obtain from your doctor, and send to the Personnel Department, a medical certificate stating you are unfit for work. Thereafter, you must submit a certificate at weekly intervals or as determined by the expiry date on your last certificate, or at such longer intervals as may be agreed by the Employer. Failure to do so will result in your absence being treated as "unauthorised" and could lead to disciplinary action being taken against you and loss of sickness or other benefits.

(d) You may send to the Employer either a private or National Health medical certificate.

(e) Should you, however, exhaust your entitlement to Statutory Sick Pay you must, thereafter, supply the DHSS with a National Health medical certificate, to be paid any State Sickness Benefit due to you. This is best done by completing all appropriate sections and sending it to the Personnel Department (with a note of the address of your local DHSS Office). The Personnel Department will then note the appropriate particulars and forward the certificate to the DHSS.

(f) You should claim from the Department of Health & Social Security for all National Insurance Benefits appropriate to your circumstances as this will be assumed when calculating the level at which sick pay is made.

(g) All forms received by you advising of the rate of National Insurance Benefits must be sent to the Personnel Department so that appropriate adjustments can be made to your salary (do not send to the Employer the actual Postal/Giro draft you receive-this should be cashed and retained).

6. ABSENCE THROUGH ILLNESS OR INJURY APPENDIX 1 20.3.92

(a) The sick pay year commences 1st January for employees with 1 year service.

(b) Other than any entitlement you may have to Statutory Sick Pay or National Health Insurance Benefits, you will not be entitled to any pay for any day you are absent from work as a result of illness or injury during the first 26 weeks of your employment with the Company.

(c) After completing 6 months service a "B" or "C" rating will be allocated to each employee based on 6 months attendance record.

(B = 0 - 4.99% absence
C = 5.00% absence or greater).

(d) From 6 to 12 months service, payment during a sickness period will be as follows:

C - payment of S.S.P. only
B - payment of Company sick pay during days when S.S.P. is payable, to a maximum of 4½ weeks payment.

(e) After completing 12 months service an "A", "B" or "C" rating will be allocated to the employee based on previous 12 months attendance record

A = 0 - 3.00% absence
B = 3.01 - 4.99% absence
C = 5.00% absence or greater

This rating will apply to the end of the calendar year in which 12 months service is completed. Where there is an entitlement to Company sick pay during this time, the maximum period will be pro-rated in ratio of 9 weeks in 12 months.

(f) At the end of each calendar year, employees with service greater than 1 year will be allocated a new attendance rating based on the previous 12 months attendance record per 6 (e) above

(g) Payment during a sickness period will be determined by the attendance rating as follows, paid to maximum coverage as shown in 6 (h).

RATING	PAYMENT DURING SICKNESS ABSENCE
A	Company sick pay during all sickness absence
B	Company sick pay during sickness absence only when S.S.P. is payable
C	S.S.P. payment only

APPENDIX 4

THE NEW ESP SCHEME

HOW THE EMPLOYEE SUGGESTION SCHEME WORKS

STEP 1 — THINK OF AN IDEA

STEP 2 — FILL IN AN ESP FORM

STEP 3 — PUT YOUR ESP FORM IN THE YELLOW BOX IN THE CANTEEN

STEP 4 — BOX IS EMPTIED BY HUMAN RESOURCES (HR) DEPARTMENT

STEP 5 — YOUR SUGGESTION IS LOGGED BY THE HR DEPARTMENT

STEP 6 — YOUR ESP FORM IS SENT OUT BY THE HR DEPARTMENT FOR MARKING

STEP 7 — YOU WILL BE TOLD WHETHER OR NOT YOUR SUGGESTION HAS BEEN ACCEPTED

STEP 8 — MARKED ESP FORM IS RETURNED TO HR DEPARTMENT. RESULT IS RECORDED

STEP 9 — IF YOUR SUGGESTION IS ACCEPTED IT WILL NOW BE IMPLEMENTED

STEP 10 — HR DEPARTMENT ARE NOTIFIED WHEN SUGGESTION IS IMPLEMENTED

STEP 11 — HR DEPARTMENT WILL CREDIT YOU WITH POINTS FOR YOUR SUGGESTION

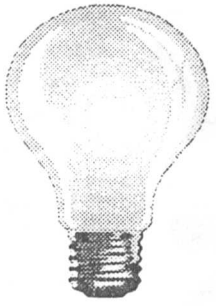
STEP 12 — YOU WILL BE TOLD HOW MANY POINTS YOU HAVE BEEN AWARDED

STEP 13 — YOU WILL RECEIVE A REWARD FOR YOUR POINTS ONCE EVERY QUARTER

HOW TO USE YOUR E.S.P.

Step 1 - Think of an Idea

While you are at work you have many opportunities to think of small improvements that will benefit the Company. You may come up with an idea whilst doing your day-to-day job; whilst working on TPM or 5Cs; or you may just see something going on in the factory and think to yourself 'I'm sure that could be done better'.



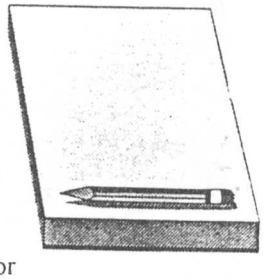
Any idea that will improve : Quality
Safety
Efficiency
Productivity

Or reduce : Cycle-time
Component costs
Scrap
Wastage

is a worthwhile idea.

Remember : i) No idea is too small
ii) You know your job better than anyone else - don't assume that someone else will have thought of the same idea and put it forward.

Step 2 - Fill in an ESP Form



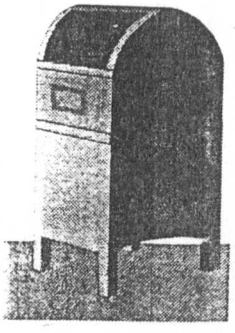
So, now that you've got an idea, tell us about it.

Take a yellow ESP form from the canteen and fill in the front side. Please provide as much detail as possible as this makes it easier for us to decide whether or not your suggestion will work. The use of drawings and diagrams will also help to make things clear.

If you find it difficult to put your ideas down on paper ask your Chargehand, Supervisor or Manager to help you. Alternatively, ask a friend for help, or, if you prefer, ask a member of the ESP Committee to help you out.

Remember : By filling in a suggestion form you lose nothing but stand to gain a lot.

Step 3 - Put your Form in the ESP Box



Once you have filled in a form you must put it in the yellow ESP Box in the canteen. This is the only way of making sure that your suggestion will be 'officially' received.

It is up to you to make sure that your form goes into the box. You will get no credit for your suggestion if you ask someone else to put it in the box and they forget!

Step 4 & Step 5 - Your Form is Collected and Logged

The yellow box in the canteen will be emptied every day and all ESP forms will be taken to the Human Resources Department.

Your suggestion will then be given a unique serial number and a record will be made of when it was received.

Step 6 & Step 7 - Your Form is sent to the Appropriate Individual(s) for Consideration

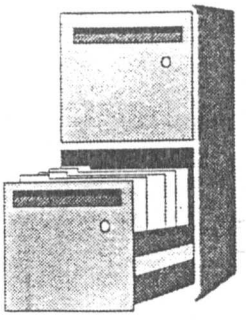
The HR Department will pass your suggestion to the most appropriate person(s) for assessment. This may be your Supervisor or Manager, or it may be the ESP committee. In addition, your suggestion may also have to be assessed by someone from another department, such as Quality Control, Finance or Production Engineering. This is so that we can check that your suggestion will be cost-effective and work well in practice.

At this stage you will be contacted by whoever is assessing your suggestion and told whether it has been accepted or rejected.

If it is rejected you will be told the reason why.

If it is accepted it will be awarded a number of points, the total of which will depend upon the cost-savings, benefit to the Company, the originality of the suggestion, and how much effort you put into making it. We will not be able to tell you at this stage how many points you have been awarded. That will come later.

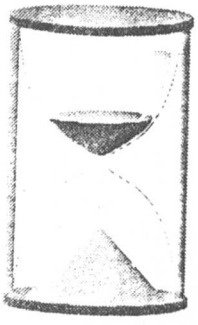
Step 8 - Outcome of Assessment is Recorded



When your suggestion has been assessed the ESP Form will be returned to the HR Department who will record the markings.

If your suggestion is accepted the next stage is implementation. If your suggestion is rejected your ESP Form will be filed and kept for future reference.

Step 9 - Your Suggestion is Implemented

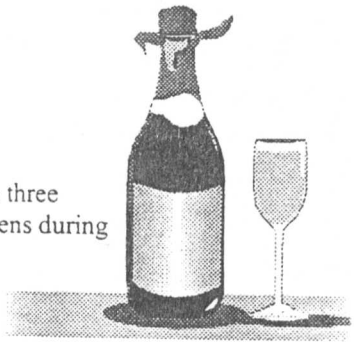


No points will be credited to you until your suggestion has been put into practice and been seen to work. This is because an idea which sounds good on paper can occasionally, for one reason or another, either not work at all or not work as well as expected in practice. As the ESP Scheme is self-financing, awards can only be made for suggestions that are of proven benefit to the Company.

The result of all this is that you may have to wait a little while before discovering how many points you have been awarded for your suggestion. In many cases this will be to your advantage. This is because during implementation other, unexpected, benefits of your suggestion may come to light, which means that you will be awarded even more points.

Steps 10, 11 & 12 - You are Awarded Points

Once your suggestion has been tried out and we have seen what benefits it has for the Company, it will be given a final award of points. You will be told by your Supervisor how many points have been awarded.

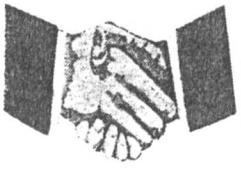


Step 13 - You Get Rewarded

The number of points that you build up from all the suggestions you make in a three month period will be converted into a monetary value and 'paid-out' in gift tokens during the third week of September, December, March and June.

Grievance Procedure

If, at any time, you are unhappy with any aspect of the Employee Suggestion Programme or with any decision made about one of your suggestions, please tell your Supervisor or Manager that you wish to raise an 'ESP Grievance'. They will then notify the ESP Committee who will be happy to discuss the matter with you. We will do everything possible to make sure that the Scheme is fair for everyone.



Damian Pearce
ESP Committee Member
June 1995

APPENDIX 5

MY PERSONAL DEVELOPMENT TRAINING PLAN

PERSONAL DEVELOPMENT PLAN

Name : GERRY [illegible]ER **Date of Issue :** 5.6.95

Development Needs	Agreed Learning Activity	Support Required	Timing	Review Date(s)	Review Comments	Cost
Ability to carry out different jobs on the line	On the-job training	Training Operator. Chargehand.	In line with Training Matrix	March 1996		In house
Core Operator Skills	NVQ Level I Qualification in Engineering Assembly (Product Assembly)	Training Operator. Chargehand. In-house NVQ Assessor. In-house Trainer. Time off the line (Approx. 2½ days).	August 1995 - March 1996	March 1996		In-house. Administration cost of NVQ
Understanding of Total Productive Maintenance (TPM)	Machinery-based instruction Off-the-job background instruction	Maintenance Technician. In-house Trainer. 2 hours off the line.	May/June 1995 May/June 1995	December 1995 December 1995		In-house In-house
Understanding of Employee Suggestion Programme	Off-the-job Training Session	In-house Trainer. 1 hour off the line.	July 1995	December 1995		In house
Understanding of SC's Techniques	Off-the-training plus implementation on the lines	In-house Trainer. Supervisor. Chargehand. Time off the line (Approx 1 day).	July - December 1995	December 1995		In-house
Basic Knowledge of Investors in People and ISO9002	Off-the-job presentation	In-house Trainer. 1½ hours off the line.	May/June 1995	July 1995		In-house
Identified through appraisal, job analysis, TNA exercise or some other means	e.g. External Training Course, Internal Training Course, Project, Secondment, On-the-job training	e.g. Training Provider, access to facilities at work, access to information, time off work, help of a mentor	e.g. Course Dates, Timing Plan	Planned dates for evaluation and reassessment of development need.	Evaluation of learning activity against objectives. Recommendations for future development.	Cost of learning activity.

APPENDIX 6

COMPANY MEMORANDUM RELATING TO THE TRAINING BADGE

YOUR REF NO

OUR REF NO

DATE 9 March 1990

PAGE

TRAINING BADGE

New employees should wear 'T' Badge during their probationary period.

1. PURPOSE OF BADGE

   a) Define employees position who are on probationary period. They need Manager, Supervisors and skilled people's help.

   b) In order to keep good quality it will call their attention.

2. POSITION OF BADGE

   Badge should be worn on the left sleeve of uniform. During working time, badge should be worn on their working uniform, if they take off their jacket they should move the badge to their shirt.

   a) JACKET - On left sleeve, about 1 inch under UK-NSI emblem.

   b) SHIRT - On left sleeve, about 1 inch above bottom of left sleeve.

NOTE:

1. If the Manager feels it necessary for the trainee to remove the badge for any reason this is acceptable.

2. After probationery period, badge should be returned to Administration Department.

H. TAKADA
Planner

APPENDIX 7

MANAGEMENT LIST OF SUPERVISOR'S RESPONSIBILITIES

Supervisor Responsibilities

.27.06.96.

1)	Output	Ensuring the target is met, overtime.
2)	Efficiency	Maintaining the required efficiency.
3)	Quality	Ensuring the quality of the finished product.
4)	Paperwork	Presentation, accuracy, filing.
5)	Housekeeping	Clean, tidy, organised, clearly marked, H&S.
6)	Line Information	Work standards, model lists, setting sheets.
7)	Training	Ensuring operators know and understand.
8)	Timekeeping	Start up, after breaks, lunch etc.
9)	Defects/Scrap	Daily analysis, action, communication.
10)	Operators	Attitude, talking, waiting, effort, caring.
11)	Finish Time	Work until 4.30, clean for 5 minutes.
12)	Resource	Use other departments, don't accept poor service.
13)	Management	Use the resources available, don't do low level jobs.
14)	Chargehands	Communicate, train, delegate, monitor.
15)	Appraisal	Performance of the above will be monitored.